

Floodlights and Industrial Lighting Units

CROUSE-HINDS COMPANY

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Floodlights and Industrial Lighting Units

CATALOG 310

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Supersedes all previous Floodlight Catalogs

CROUSE-HINDS COMPANY

ESTABLISHED 1897

SYRACUSE, N. Y., U. S. A.

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FLOODLIGHT CLASSIFICATION

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250	G-250	21
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Note: See opposite page for definitions of the above classifications.

FLOODLIGHTING

Floodlight projectors are made in various sizes and styles to conform to the requirements of different classes of service. They can be broadly classified as Short Range, Medium Range, and Long Range. Some types can be made to conform to more than one classification by varying reflectors, lenses, and lamps.

Medium range floodlights fill the majority of floodlighting requirements, and the other types can be regarded as more or less special. The natural spread of the reflector varies from approximately 20 degrees to 36 degrees. This spread can be increased by throwing the lamp out of focus and by using spread or diffusing lenses. Types LCA and LCE projectors are medium range units when used with standard PS bulb lamps, and will meet most floodlighting requirements.

Short range floodlights are equipped with diffusing reflectors, and throw a wide spill of light of comparatively low candle power. They are used where the floodlights must be mounted very close to the area to be lighted. They are efficient for that purpose, but should not be used for projecting light to any distance. Types BCA, BCE, ECA, and ECE are representative of this class.

Long range floodlights are used for spotting distant objects or lighting restricted areas where the beam of light must be confined to a small area. They use concentrated filament lamps. Types LCA and LCE projectors can be supplied for use with these lamps and are satisfactory for all except extremely long range projection. When the narrowest possible beam is required, it is necessary to use a reflector designed for such service. These reflectors are accurately ground and polished, and confine the light beam to a smaller divergence. Types DCE, LDA, LDE, SDA, and SDE projectors meet these requirements.

Selection of Floodlights

The selection of the proper floodlight for any given service requires a careful consideration of the beam divergence, size of unit, and efficiency. In many cases, the selection of the proper unit should be left to the judgment of a competent illuminating engineer. Considerable information on this subject is given on pages 35 to 41. A brief discussion of some of the main classes of floodlight applications is given below:

Buildings

This includes public buildings, such as the Capitol of the State of Washington, depicted on the front cover of this catalog, office buildings, stores, banks, churches, etc. There are two methods of lighting buildings. The one most generally used is the placing of floodlights across the street, or on the ground or poles within fifty to one hundred and fifty feet from the building. Such buildings are best lighted by type LCA or LCE floodlights. The largest size units which will provide even lighting should be used. Sufficient units should be used so that every portion of the building receives light from more than one projector.

Most new office buildings are designed with the upper stories set back, providing ledges which can be utilized to conceal floodlights and the lighting can be done from the building itself. Attempts are sometimes made to floodlight buildings from very narrow ledges which often have no parapet, leaving the unit in full view. This type of lighting is almost never satisfactory, as the light is projected at too sharp an angle to be effective, and an uneven and spotty appearance is the result. Where it is desired to light more than one or two stories of a building from a ledge, the ledge should be at least six to ten feet wide, and surrounded by a parapet.

General Yard Lighting

This includes yards of industrial plants, lighted for protective purposes or night operation, prison yards, parking spaces, and residence yards. Types LCA and LCE floodlights meet these requirements. The floodlights can generally be mounted on roofs of buildings and should be high enough to prevent glare. When it is necessary to project the light to a considerable distance, floodlights with clear lenses should be used to light the distant parts of the yard, and floodlights with spread or diffusing lenses to light the yard near the floodlights.

Parking spaces should be lighted with units mounted as high as possible, and usually with diffusing lenses, to eliminate any glare. Wherever possible, the light should be projected perpendicularly to the line of cars driving in and out, and should be projected from more than one side.

Residence yards can usually be lighted with types LCE12 or LCE16 floodlights with diffusing lenses. A switch on the outside of the house where it can be reached from the driveway is a great convenience when driving in at night, flooding the yard and approach to the garage with light.

Railroad Yards

Railroad yards are usually lighted with types LCE20 or LCE24 floodlights mounted on steel towers 75 to 120 feet in height. The higher towers are preferable, as they provide a better light distribution and reduce glare. These floodlights should be equipped with clear lenses and standard PS bulb lamps, either 1000 or 1500-watt.

Signs

Most signs can be lighted efficiently and effectively with types LCA or LCE floodlights. For long narrow signs, use a spread lens. As a rule, signs require a much higher intensity than buildings.

Construction Work

Types LCE20 and LCE24 provide a powerful working light. Spread lenses are generally suitable.

Outdoor Sports

Playing fields for football and baseball are best lighted with types LCE20 or LCE24 floodlights with spread lenses. They should be mounted high to avoid glare.

Electric Fountains

Type FDV12 fountain floodlights with colored lenses will provide beautiful color effects. The floodlights should be on several circuits, with motor-driven dimmers.

Airport Lighting

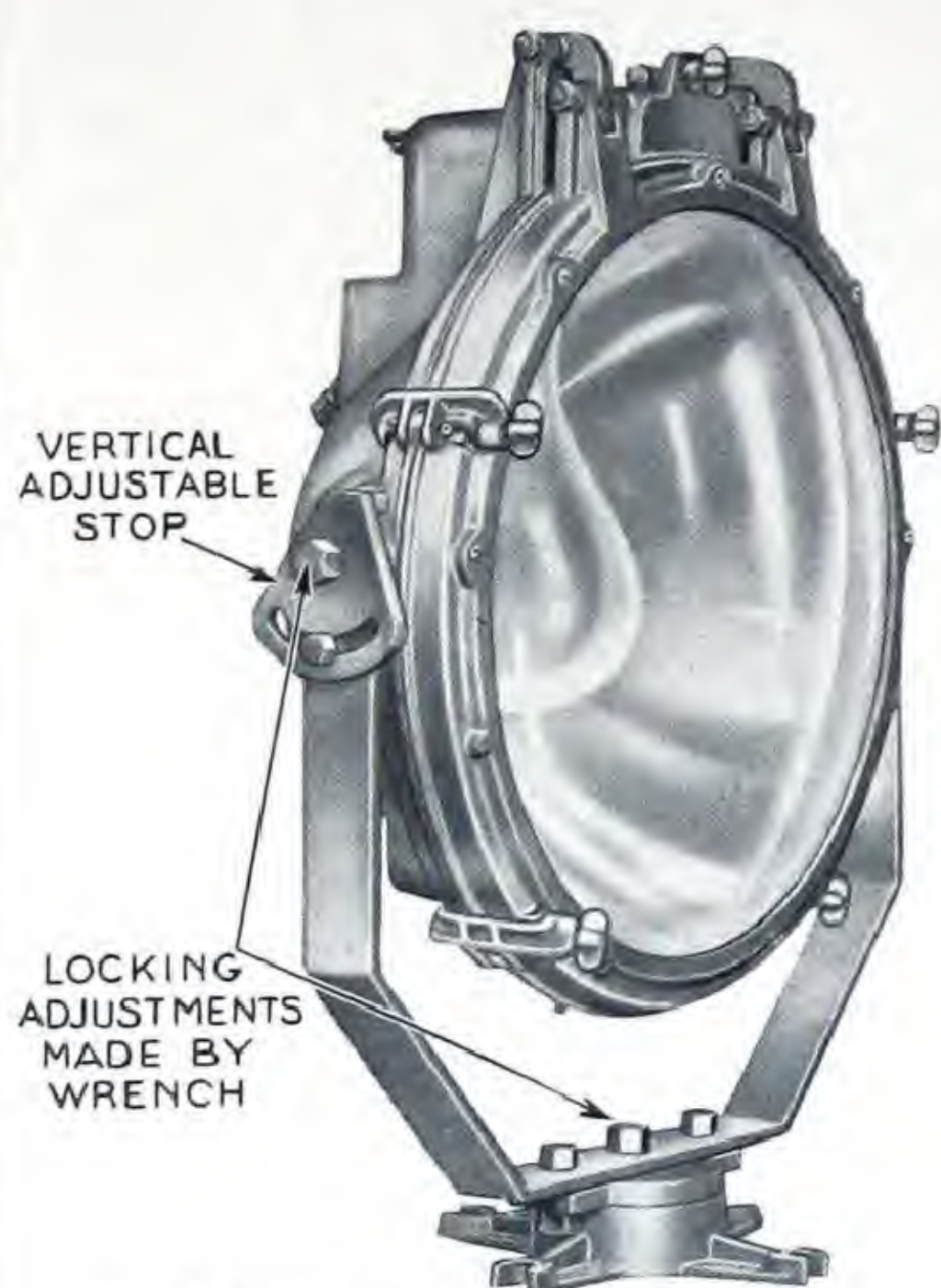
A complete catalog of Airport Lighting Equipment will be sent upon request.

TYPE LCE FLOODLIGHT PROJECTORS

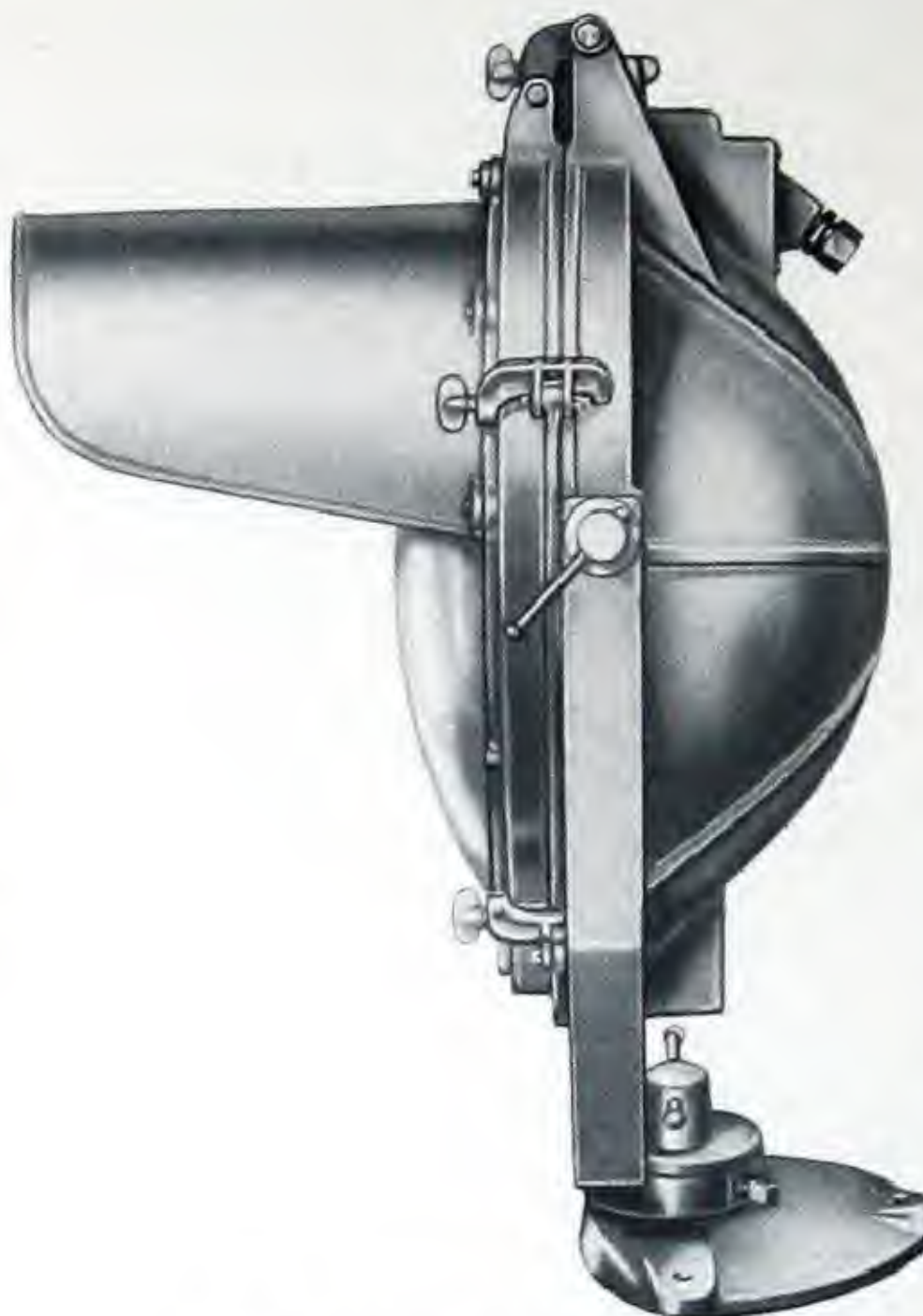
Medium and Long Range

20-Inch Projector, 1000-Watt Lamp

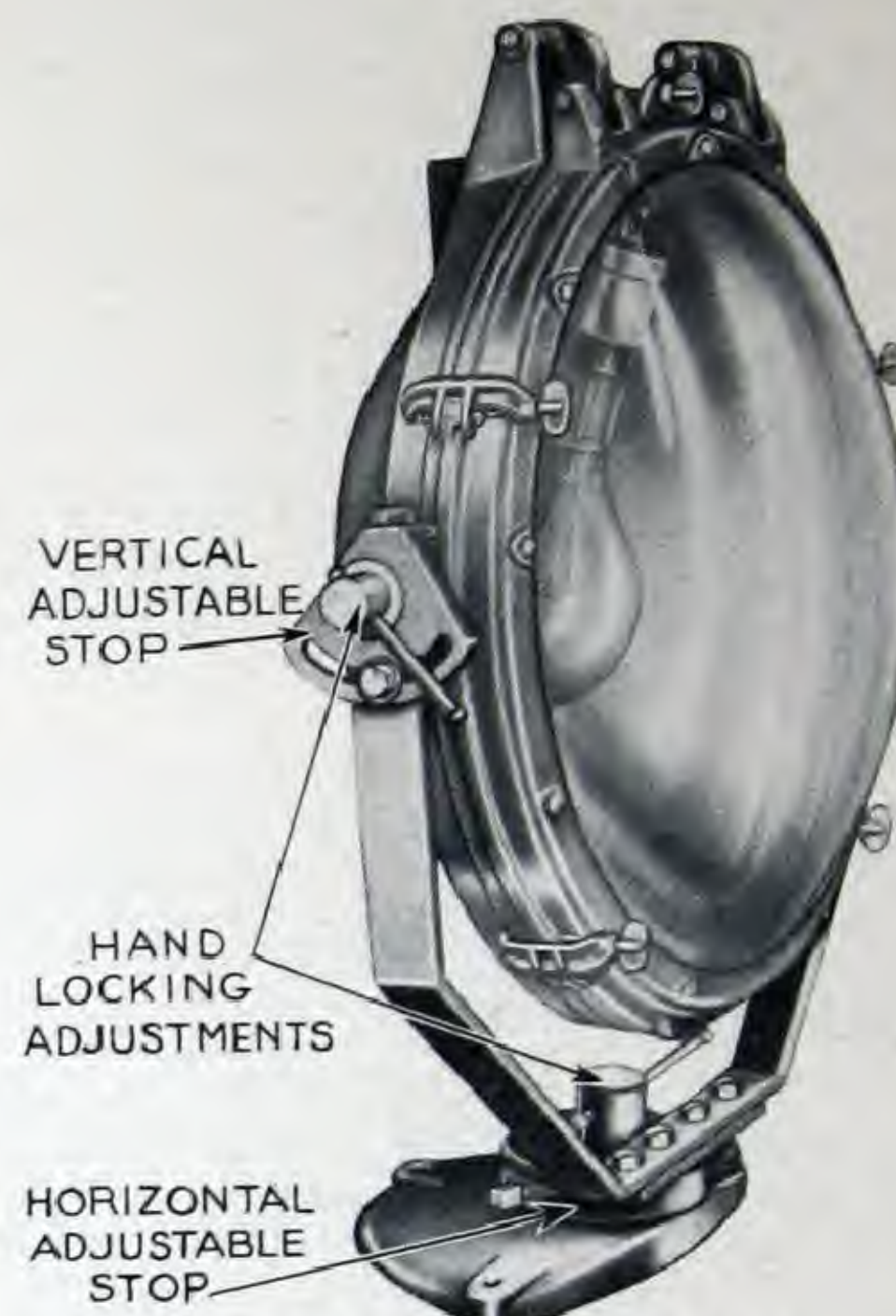
24-Inch Projector, 1500-Watt Lamp



Type LCE20—Simple Trunnion Mounting



Type LCE24 with Hood



Type LCE24—Standard Mounting

EFFICIENCY: Types LCE20 and LCE24 floodlight projectors represent the latest advance in floodlighting practice. They are designed to utilize the maximum amount of the light of the lamp. This increased efficiency allows large areas to be lighted with a smaller number of projectors, with a corresponding decrease in installation cost, lighting load, and maintenance costs.

DUST-TIGHT: The cases of the LCE20 and LCE24 floodlight projectors are dust-tight and weatherproof. The large radiating surface makes ventilation unnecessary. In a projector which is ventilated, the stream of air passing through carries with it all the dust and gas present in the atmosphere. The dust collects on the reflector, lamp, and lens and soon cuts the light output to a small fraction of its initial value. This dust is difficult to remove, and proper maintenance demands very frequent cleaning. Types LCE20 and LCE24 projectors stay clean on the inside, and an occasional wiping off of the outside of the lens will keep them operating at full efficiency.

CLEANING AND RELAMPING: Floodlight projectors are often mounted on the edge of tower platforms or roofs and unless special provision is made, it is practically impossible to clean and relamp the projector. To provide for this, types LCE20 and LCE24 projectors can be equipped with two very simple devices, by means of which the projector can be turned around or tipped completely over, or both, for convenience in relamping and cleaning, and then returned to the exact original setting without further adjustments. These devices are known as "Adjustable Stops". The simple trunnion mounting eliminates the lower "Adjustable Stop".

HOODS: When floodlight projectors are used for lighting railroad or factory yards, the area immediately beneath the projector between the tower and the place where the main beam strikes is often quite dark. Types LCE20 and LCE24 floodlight projectors can be supplied with a large cast-aluminum hood which reflects part of the stray light above the beam to the ground. The hood also prevents dust and soot from falling on the lens (see page 27).

SELECTION OF LAMP: The lamps most commonly used with types LCE20 and LCE24 projectors are the standard lighting service lamps, 1000-watt PS-52 for the LCE20, and 1500-watt PS-52 for the LCE24. Most floodlighting installations do not call for extremely high beam candle power, but rather for an even distribution of light over a fairly large surface. The standard lamps should be used wherever possible on account of their higher efficiency, lower cost, and longer life. When a very narrow beam of light of high beam candle power is required, it can be obtained with these same projectors by the use of concentrated filament lamps. These lamps are special and must be ordered from the lamp manufacturer. Concentrated filament lamps in the G bulb must be burned base down; if it is desired to use these lamps, types LCE20 and LCE24 projectors must be supplied with the lamp receptacle at the bottom of the case.

SELECTION OF REFLECTOR: Hammered glass reflectors can be supplied with types LCE20 and LCE24 projectors, and are recommended in conjunction with the clear lenses, wherever a narrow beam and high candle power are not required. The hammered surface eliminates the filament images and uneven appearance of the beam which are generally produced by the large filament of a standard lighting service lamp, and leaves a beam which is slightly wider but much more uniform.

TYPE LCE FLOODLIGHT PROJECTORS

Medium and Long Range

20-Inch Projector, 1000-Watt Lamp

24-Inch Projector, 1500-Watt Lamp

HOUSING: Cast-aluminum alloy, dust-tight, and weather-proof.

REFLECTOR: Crystal glass with either smooth or hammered surface. LCE20, 19½" diameter; LCE24, 24" diameter. See page 27.

MOUNTINGS: Steel trunnion on cast-iron base. Standard mounting has both horizontal and vertical adjustable stops and the floodlight is locked in position by means of hand screws. Simple trunnion mounting has only the vertical adjustable stop, and all locking adjustments are made by means of a wrench.

FOCUSING MECHANISM: One-way, hand operated by wing nut on outside of case.

LAMP RECEPTACLE: Porcelain Mogul (Cat. No. HL8751).

WIRING CONNECTIONS: A connection box with cover having threaded hub, and with binding posts for convenient connection is provided on the rear of the case. A CGB25 connector or stuffing box is provided for making a watertight connection to the lead wire. This connector has a rubber bushing which will clamp flexible cord from ½ to ⅝-inch diameter. CGB240 connector with lead sleeve for connecting to armored cable from ¾ to 1-inch diameter will be supplied without additional charge, if specified on the order.

DOOR FRAME: Cast-aluminum alloy, with two hinges at top. Door and case are ground to a dust-tight fit.

DOOR CATCHES: Special "C" clamps.

HINGES: Two hinges having loose center section to allow even seating of the door.

ADJUSTABLE STOPS: Two simple adjustable stops can be provided. The vertical stop allows the projector to be tipped completely over, and the horizontal stop allows the projector to be turned around for relamping and cleaning, and then returned to the exact original setting. Both stops are provided with the standard mounting. Only the vertical stop is provided with the simple trunnion mounting.

LENS: Clear, convex, heat-resisting. Spread or diffusing, convex, heat-resisting lens can be furnished at a small additional cost. See pages 28 and 29.

LAMPS: LCE20—750 or 1000-watt, PS-52 bulb; 1000-watt, G-40 bulb. LCE24—750 to 1500-watt, PS-52 bulbs; 1000 or 1500-watt, G-40 bulbs. See page 34 for lamp data.

DIMENSIONS: See page 42.

FINISH: Case, natural aluminum; base and trunnion, galvanized.

NET WEIGHTS	Type	SHIPPING WEIGHTS
	Standard Mounting	
95 lbs.	LCE20	160 lbs.
113 lbs.	LCE24	210 lbs.
	Simple Trunnion Mounting	
75 lbs.	LCE20	140 lbs.
94 lbs.	LCE24	191 lbs.

Type	Reflector	Lamp		Mounting	Catalog Number	List Prices
		Watts	Bulb			
LCE20	Smooth	750 or 1000	PS-52	Standard	40353	On Request
LCE20	Smooth	1000	G-40	Standard	40354	
LCE20	Hammered	750 or 1000	PS-52	Standard	40355	
LCE20	Smooth	750 or 1000	PS-52	Simple Trunnion	40463	
LCE20	Smooth	1000	G-40	Simple Trunnion	40465	
LCE20	Hammered	750 or 1000	PS-52	Simple Trunnion	40464	
LCE24	Smooth	750 to 1500	PS-52	Standard	40008	
LCE24	Smooth	1000 or 1500	G-40	Standard	40297	
LCE24	Hammered	750 to 1500	PS-52	Standard	40356	
LCE24	Smooth	750 to 1500	PS-52	Simple Trunnion	40466	
LCE24	Smooth	1000 or 1500	G-40	Simple Trunnion	40468	
LCE24	Hammered	750 to 1500	PS-52	Simple Trunnion	40467	

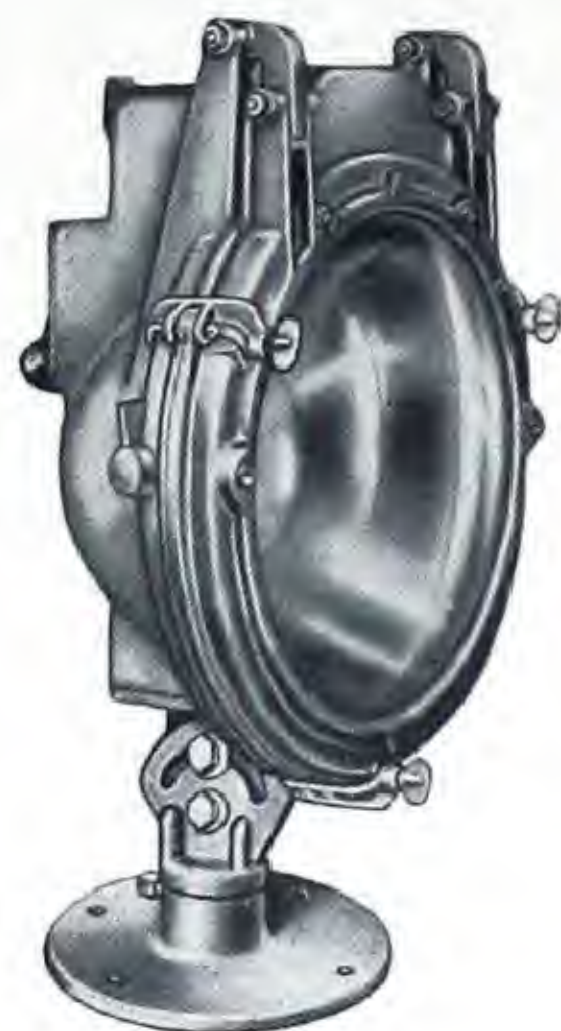
Focusing Directions, pages 32 and 33. Hoods, page 27. Illumination Data, page 36. Special Bases, pages 30 and 31.

TYPES LCA AND LCE FLOODLIGHT PROJECTORS

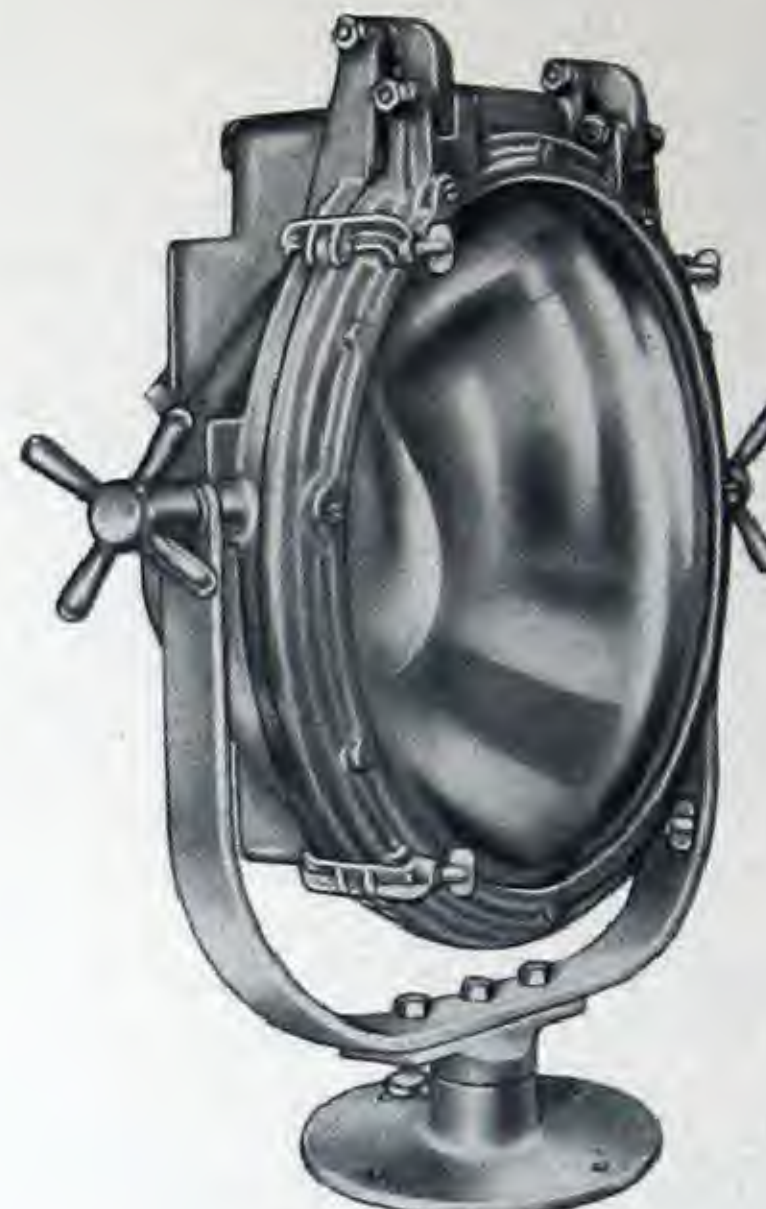
Medium and Long Range

12-Inch Projector, 200-Watt Lamp

16-Inch Projector, 500-Watt Lamp



Type LCA12
Quadrant Mounting



Type LCE16
Trunnion Mounting

Types LCA12, LCE12, LCA16, and LCE16 floodlight projectors are similar in design to types LCE20 and LCE24. They are designed to utilize the maximum amount of the light of the lamp. These projectors can be supplied in two styles of mounting and with either cast-iron or cast-aluminum alloy case, the choice of which is left to the customer. The cast-aluminum alloy case is lighter and easier to handle. In most localities it will never require painting, and offers maximum resistance to corrosion.

DUST-TIGHT: The cases of these projectors are dust-tight and weatherproof. They are designed to radiate the heat of the lamp without ventilation. In a projector which is ventilated, the stream of air passing through carries with it all the dust and gas present in the atmosphere. The dust collects on the reflector, lamp, and lens and soon cuts the light output to a small fraction of its initial value. This dust is difficult to remove, and proper maintenance demands very frequent cleaning. Types LCA and LCE projectors stay clean on the inside, and an occasional wiping off of the outside of the lens will keep them operating at full efficiency.

CLEANING AND RELAMPING: When these projectors are to be mounted on the edge of a platform or tower where it would be inconvenient or impossible to open the front door for cleaning and relamping, these floodlights can be supplied with adjustable stops. They can then be tipped completely over or turned around, or both, when relamping, and then returned to the exact original setting without further adjustments. Prices of this mounting, on application.

HOODS: Cast-iron or cast-aluminum alloy hoods for reflecting the stray light above the beam down to the ground can be supplied with these projectors at the additional prices shown on page 27.

SELECTION OF LAMP: Most floodlighting installations do not require narrow beam spread or extremely high beam candle power. The standard lighting service lamps should be used wherever possible on account of their higher efficiency, lower cost, and longer life. When a small area must be lighted from a distance, a narrow beam spread is necessary, and for this purpose types LCA and LCE projectors are listed with the lamp receptacle arranged for G bulb concentrated filament floodlighting lamps.

SELECTION OF REFLECTOR: The filaments of standard lighting service PS bulb lamps are relatively large and extended. When used with a smooth glass reflector, the beam from such a lamp is uneven, with bright streaks or filament images. Types LCA and LCE projectors are equipped with hammered glass reflectors. The hammered surface smooths out the beam and leaves it remarkably uniform. When concentrated filament lamps are used, a smooth glass reflector is furnished.

TYPES LCA AND LCE FLOODLIGHT PROJECTORS

Medium and Long Range

12-Inch Projector, 200-Watt Lamp

16-Inch Projector, 500-Watt Lamp

HOUSING: Cast-iron or cast-aluminum alloy, dust-tight, and weatherproof.

REFLECTOR: 12 and 16-inch crystal glass with hammered surface when used with standard lamp, and smooth surface when used with concentrated filament lamp. The smooth reflector will be furnished with the projector arranged for PS bulb lamps without additional charge, if specified on the order. See page 27.

MOUNTINGS: Type LCA, quadrant. Type LCE, trunnion.

FOCUSING MECHANISM: One-way, hand operated by wing nut on rear of case.

LAMP RECEPTACLE: Porcelain medium screw base for 12-inch (Cat. No. HL9131); Mogul for 16-inch (Cat. No. HL8751).

WIRING CONNECTIONS: A connection box with cover having threaded hub, and with binding posts for convenient connection is provided on the rear of the case. A CGB25 connector or stuffing box is provided for making a watertight connection to the lead wire. This connector has a rubber bushing which will clamp flexible cord from $\frac{1}{2}$ to $\frac{5}{8}$ -inch diameter. CGB240 connector with lead sleeve for connecting to armored cable from $\frac{3}{4}$ to $\frac{5}{8}$ -inch diameter will be supplied without additional charge, if specified on the order.

DOOR FRAME: Cast-iron or cast-aluminum alloy, with two hinges at top. Door and case are ground to a dust-tight fit.

DOOR CATCHES: Special "C" clamps.

HINGES: Two hinges having loose center section to allow even seating of the door.

ADJUSTABLE STOPS: Types LCA and LCE floodlights can be supplied with a special trunnion mounting which is provided with two simple adjustable stops. These floodlights can be tipped completely over or turned around, or both, for convenience in relamping and cleaning, and then returned to the exact original setting. Prices on application.

LENS: Clear, convex, heat-resisting. Spread or diffusing, convex, heat-resisting lens can be furnished without additional charge, if specified on the order. See pages 28 and 29.

LAMPS: 12-inch projector—200-watt, PS-30 bulb; 250-watt, G-30 bulb. 16-inch projector—300 or 500-watt, PS bulb; 500-watt, G-40 bulb. See page 34 for lamp data.

DIMENSIONS: See page 43 for type LCA, and page 44 for type LCE.

FINISH: Cast-aluminum alloy floodlights—case, natural aluminum; base and trunnion, galvanized. Cast-iron floodlights, galvanized.

NET WEIGHTS

SHIPPING WEIGHTS

Cast-Aluminum	Cast-Iron	Type	Cast-Aluminum	Cast-Iron
32 lbs.	51 lbs.	LCA12	76 lbs.	94 lbs.
33 lbs.	53 lbs.	LCE12	78 lbs.	96 lbs.
44 lbs.	71 lbs.	LCA16	101 lbs.	128 lbs.
46 lbs.	73 lbs.	LCE16	103 lbs.	130 lbs.

Type	Reflector	Lamp		Mounting	Cast-Iron Case		Cast-Aluminum Alloy Case	
		Watts	Bulb		Catalog Number	List Prices	Catalog Number	List Prices
LCA12	Hammered	200	PS-30	Quadrant	40392	On Request	40395	On Request
LCA12	Smooth	250	G-30	Quadrant	40391		40394	
LCE12	Hammered	200	PS-30	Trunnion	40383		40380	
LCE12	Smooth	250	G-30	Trunnion	40382		40379	
LCA16	Hammered	300 or 500	PS	Quadrant	40398		40401	
LCA16	Smooth	500	G-40	Quadrant	40397		40400	
LCE16	Hammered	300 or 500	PS	Trunnion	40389		40386	
LCE16	Smooth	500	G-40	Trunnion	40388		40385	

Focusing Directions, pages 32 and 33. Hoods, page 27. Illumination Data, page 36. Special Bases and Brackets, pages 30 and 31.

TYPES BCA AND BCE WIDE ANGLE FLOODLIGHTS

Short Range

16-Inch Reflector

300 to 1000-Watt Lamps



Type BCA16
Quadrant Mounting



Type BCE16
Trunnion Mounting

Types BCA16 and BCE16 floodlights differ only in their forms of mounting. They have exactly the same illuminating characteristics. They are designed for the illumination of large areas such as yards, buildings, or large signs, where the floodlight can be mounted very close to the area lighted.

The diffusing type reflector used in these floodlights gives a very wide beam spread and comparatively low candle power. When used for yard lighting, types BCA16 and BCE16 should be mounted at least 25 feet from the ground and tipped down.

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: 16-inch diffusing aluminized metal. See page 27.

MOUNTINGS: Type BCA, quadrant. Type BCE, trunnion.

FOCUSING MECHANISM: Two-way, hand operated from top of housing.

LAMP RECEPTACLE: Porcelain Mogul (Cat. No. HL7136).

WIRE: Two 3-foot leads No. 14 gauge stranded, weather-proof wire.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged at top (Cat. No. HL1704).

LENS: Clear, convex, heat-resisting. Diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 300 to 1000-watt, PS bulbs. See page 34 for lamp data.

DIMENSIONS: See page 43 for type BCA, and page 44 for type BCE.

FINISH: Baked black enamel.

NET WEIGHTS: BCA16, 48½ lbs.; BCE16, 50 lbs.

SHIPPING WEIGHTS: BCA16, 98½ lbs.; BCE16, 100 lbs.

Style	Catalog Number	List Prices
BCA16, Quadrant Mounting	30318	On
BCE16, Trunnion Mounting	30319	Request

Illumination Data, page 36. Special Bases and Brackets, pages 30 and 31.

TYPES ECA AND ECE WIDE ANGLE FLOODLIGHTS

Short Range

16-Inch Reflector

300 to 500-Watt Lamps



Type ECA16
Quadrant Mounting



Type ECE16
Trunnion Mounting

Types ECA16 and ECE16 floodlights differ only in their forms of mounting. They have exactly the same illuminating characteristics. They are used for illuminating gasoline stations, yards, signs, etc., where the floodlight can be mounted very close to the area lighted. They are used where a smaller unit than the types BCA16 and BCE16 is desired.

The diffusing type reflector used in these floodlights gives a very wide beam spread and comparatively low candle power. When the floodlight is mounted so that the direct lamp rays produce glare to automobile drivers, or pedestrians, a diffusing lens should be used. This will eliminate all glare.

When used for lighting yards or driveways of gasoline stations, types ECA16 and ECE16 floodlights should be mounted at least 25 feet from the ground. A very neat and convenient mounting system for use with steel poles is shown on pages 30 and 31.

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: 16-inch diffusing aluminized metal. See page 27.

MOUNTINGS: Type ECA, quadrant. Type ECE, trunnion.

FOCUSING MECHANISM: None

LAMP RECEPTACLE: Porcelain Mogul (Cat. No. HL7136).

WIRE: Two 3-foot leads No. 14 gauge stranded, weather-proof wire.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged and held closed by two cam clamps (Cat. No. HL1704).

LENS: Clear, convex, heat-resisting. Diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 300 to 500-watt, PS bulbs. See page 34 for lamp data.

DIMENSIONS: See page 43 for type ECA, and page 44 for type ECE.

FINISH: Baked black enamel.

NET WEIGHTS: ECA16, 34 lbs.; ECE16, 36 lbs.

SHIPPING WEIGHTS: ECA16, 84 lbs.; ECE16, 86 lbs.

Style	Catalog Number	List Prices
ECA16, Quadrant Mounting	30320	On
ECE16, Trunnion Mounting	30321	Request

Illumination Data, page 36. **Special Bases and Brackets,** pages 30 and 31.

TYPES LDA AND LDE FLOODLIGHT PROJECTORS

Long Range

9½-Inch Reflector, 150-Watt Lamp

12-Inch Reflector, 250-Watt Lamp

16-Inch Reflector, 500-Watt Lamp



Type LDA10
Quadrant Mounting



Type LDE10
Trunnion Mounting



Type LDE16
Trunnion Mounting

Types LDA and LDE floodlight projectors are designed for long range, narrow beam work. The optical system is the same as supplied with types SDA and SDE projectors shown on the opposite page. Types LDA10 and LDE10 can be supplied with either ground and polished or blown reflector. The blown reflector is not as accurate and gives a wider beam of lower candle power. Where the narrowest beam is not required, it will be found to be satisfactory.

WARNING: On account of the construction of the incandescent lamps, these projectors must not be tipped down more than 45 degrees below the horizontal.

HOUSING: Cast-iron or cast-aluminum alloy, dust-tight, and weatherproof.

REFLECTOR: Crystal glass, 9½, 12, or 16-inch. See page 27.

MOUNTINGS: Type LDA, quadrant. Type LDE, trunnion.

FOCUSING MECHANISM: One-way, hand operated by a knurled thumb wheel on the back of the case.

LAMP RECEPTACLE: Porcelain, medium screw base for 9½ and 12-inch (Cat. No. HL6019); Mogul for 16-inch (Cat. No. HL7136).

WIRING CONNECTIONS: 2 feet of weatherproof cable which enters housing through a watertight stuffing box.

DOOR FRAME: Cast-iron or cast-aluminum alloy, clamped to case with capped wing nuts. A heavy gasket makes a weatherproof joint.

LENS: Clear, convex, heat-resisting. Spread, convex, heat-resisting lens can be furnished without additional charge, if specified on the order. See pages 28 and 29.

LAMPS: 94, 100, 150-watt, P-25 for 9½-inch projector. 250-watt, G-30 for 12-inch projector. 500-watt, G-40 for 16-inch projector. See page 34 for lamp data.

DIMENSIONS: See page 43 for type LDA, and page 44 for type LDE.

FINISH: Cast-aluminum alloy floodlights—case, natural aluminum; base and trunnion, galvanized. Cast-iron floodlights, galvanized.

NET WEIGHTS

31 lbs.
32 lbs.
50 lbs.
52 lbs.
79 lbs.
87 lbs.

Type Cast-Iron

LDA10
LDE10
LDA12
LDE12
LDA16
LDE16

SHIPPING WEIGHTS

56 lbs.
57 lbs.
75 lbs.
77 lbs.
104 lbs.
112 lbs.

Cast-Aluminum

21 lbs.
22 lbs.
30 lbs.
32 lbs.
43 lbs.
51 lbs.

LDA10
LDE10
LDA12
LDE12
LDA16
LDE16

46 lbs.
47 lbs.
55 lbs.
58 lbs.
68 lbs.
76 lbs.

Type	Reflector*	Lamp		Mounting	Cast-Iron Case		Cast-Aluminum Alloy Case	
		Watts	Bulb		Cat. No.	List Prices	Cat. No.	List Prices
LDA10	Molded	94 to 150	P-25	Quadrant	40375	On Request	40372	On Request
LDE10	Molded	94 to 150	P-25	Trunnion	40371		40370	
LDA10	Blown	94 to 150	P-25	Quadrant	40376		40373	
LDE10	Blown	94 to 150	P-25	Trunnion	40359		40345	
LDA12	Molded	250	G-30	Quadrant	40509		40510	
LDE12	Molded	250	G-30	Trunnion	40218		40222	
LDA16	Molded	500	G-40	Quadrant	40511		40512	
LDE16	Molded	500	G-40	Trunnion	40210		40214	

*Molded reflectors are ground and polished. Blown reflectors are not.

Focusing Directions, pages 32 and 33. Illumination Data, page 36. Special Bases and Brackets, pages 30 and 31.

TYPES SDA AND SDE FLOODLIGHT PROJECTORS

Long Range

9 $\frac{5}{8}$ -Inch Reflector, 150-Watt Lamp

12-Inch Reflector, 250-Watt Lamp

16-Inch Reflector, 500-Watt Lamp



Type SDA12
Quadrant Mounting



Type SDE12
Trunnion Mounting

The optical system is the same as supplied with types LDA and LDE shown on the opposite page.

WARNING: On account of the construction of the incandescent lamps, these projectors must not be tipped down more than 45 degrees below the horizontal.

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: Crystal glass, 9 $\frac{5}{8}$, 12, or 16-inch. See page 27.

MOUNTINGS: Type SDA, quadrant. Type SDE, trunnion.

FOCUSING MECHANISM: One-way, hand operated by a knurled thumb wheel on back of case.

LAMP RECEPTACLE: Porcelain medium screw base for 9 $\frac{5}{8}$ and 12-inch (Cat. No. HL6019); Mogul for 16-inch (Cat. No. HL7136).

WIRE: Two 3-foot leads No. 14 gauge stranded, weather-proof wire.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged at top.

LENS: Clear, convex, heat-resisting. Spread, convex, heat-resisting lens can be furnished without additional charge, if specified on the order. See pages 28 and 29.

LAMPS: 94-watt, 100-watt, 150-watt, P-25 for 9 $\frac{5}{8}$ -inch projector. 250-watt, G-30 for 12-inch projector. 500-watt, G-40 for 16-inch projector. See page 34 for lamp data.

DIMENSIONS: See page 43 for type SDA, and page 44 for type SDE.

FINISH: Baked black enamel.

NET WEIGHTS

22 lbs.
24 lbs.
28 lbs.
30 lbs.
44 lbs.
46 lbs.

Type

SDA10
SDE10
SDA12
SDE12
SDA16
SDE16

SHIPPING WEIGHTS

48 lbs.
50 lbs.
55 lbs.
57 lbs.
71 lbs.
73 lbs.

Type	Reflector*	Lamp		Mounting	Catalog Number	List Prices
		Watts	Bulb			
SDA10	Molded	94 to 150	P-25	Quadrant	28685	On Request
SDE10	Molded	94 to 150	P-25	Trunnion	29069	
SDA10	Blown	94 to 150	P-25	Quadrant	40335	
SDE10	Blown	94 to 150	P-25	Trunnion	40336	
SDA12	Molded	250	G-30	Quadrant	28621	
SDE12	Molded	250	G-30	Trunnion	28688	
SDA16	Molded	500	G-40	Quadrant	28714	
SDE16	Molded	500	G-40	Trunnion	28715	

*Molded reflectors are ground and polished. Blown reflectors are not.

Focusing Directions, pages 32 and 33. **Illumination Data,** page 36. **Special Bases and Brackets,** pages 30 and 31.

TYPES BCA AND BCE WIDE ANGLE FLOODLIGHTS

Short Range

16-Inch Reflector

300 to 1000-Watt Lamps



Type BCA16
Quadrant Mounting



Type BCE16
Trunnion Mounting

Types BCA16 and BCE16 floodlights differ only in their forms of mounting. They have exactly the same illuminating characteristics. They are designed for the illumination of large areas such as yards, buildings, or large signs, where the floodlight can be mounted very close to the area lighted.

The diffusing type reflector used in these floodlights gives a very wide beam spread and comparatively low candle power. When used for yard lighting, types BCA16 and BCE16 should be mounted at least 25 feet from the ground and tipped down.

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: 16-inch diffusing aluminized metal. See page 27.

MOUNTINGS: Type BCA, quadrant. Type BCE, trunnion.

FOCUSING MECHANISM: Two-way, hand operated from top of housing.

LAMP RECEPTACLE: Porcelain Mogul (Cat. No. HL7136).

WIRE: Two 3-foot leads No. 14 gauge stranded, weather-proof wire.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged at top (Cat. No. HL1704).

LENS: Clear, convex, heat-resisting. Diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 300 to 1000-watt, PS bulbs. See page 34 for lamp data.

DIMENSIONS: See page 43 for type BCA, and page 44 for type BCE.

FINISH: Baked black enamel.

NET WEIGHTS: BCA16, 48½ lbs.; BCE16, 50 lbs.

SHIPPING WEIGHTS: BCA16, 98½ lbs.; BCE16, 100 lbs.

Style	Catalog Number	List Prices
BCA16, Quadrant Mounting	30318	On
BCE16, Trunnion Mounting	30319	Request

Illumination Data, page 36. Special Bases and Brackets, pages 30 and 31.

TYPES ECA AND ECE WIDE ANGLE FLOODLIGHTS

16-Inch Reflector

Short Range

300 to 500-Watt Lamps



Type ECA16
Quadrant Mounting



Type ECE16
Trunnion Mounting

Types ECA16 and ECE16 floodlights differ only in their forms of mounting. They have exactly the same illuminating characteristics. They are used for illuminating gasoline stations, yards, signs, etc., where the floodlight can be mounted very close to the area lighted. They are used where a smaller unit than the types BCA16 and BCE16 is desired.

The diffusing type reflector used in these floodlights gives a very wide beam spread and comparatively low candle power. When the floodlight is mounted so that the direct lamp rays produce glare to automobile drivers, or pedestrians, a diffusing lens should be used. This will eliminate all glare.

When used for lighting yards or driveways of gasoline stations, types ECA16 and ECE16 floodlights should be mounted at least 25 feet from the ground. A very neat and convenient mounting system for use with steel poles is shown on pages 30 and 31.

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: 16-inch diffusing aluminized metal. See page 27.

MOUNTINGS: Type ECA, quadrant. Type ECE, trunnion.

FOCUSING MECHANISM: None

LAMP RECEPTACLE: Porcelain Mogul (Cat. No. HL7136).

WIRE: Two 3-foot leads No. 14 gauge stranded, weather-proof wire.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged and held closed by two cam clamps (Cat. No. HL1704).

LENS: Clear, convex, heat-resisting. Diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 300 to 500-watt, PS bulbs. See page 34 for lamp data.

DIMENSIONS: See page 43 for type ECA, and page 44 for type ECE.

FINISH: Baked black enamel.

NET WEIGHTS: ECA16, 34 lbs.; ECE16, 36 lbs.

SHIPPING WEIGHTS: ECA16, 84 lbs.; ECE16, 86 lbs.

Style	Catalog Number	List Prices
ECA16, Quadrant Mounting	30320	On
ECE16, Trunnion Mounting	30321	Request

Illumination Data, page 36. **Special Bases and Brackets,** pages 30 and 31.

TYPE SDX INCANDESCENT SEARCHLIGHTS

Long Range

12-Inch Reflector, 250-Watt Lamp

16-Inch Reflector, 500-Watt Lamp



Type SDX
Pedestal Mounting

Type SDX projector is an incandescent searchlight for river, harbor, and pleasure craft, and can also be used to advantage on watch towers. Two different sizes are made; one having a 16-inch reflector to take 500-watt lamps, and the other having a 12-inch reflector to take 250-watt lamps. Only focus type, floodlighting or stereopticon lamps in round bulbs should be used.

With the lever control the vertical movement is instantaneously regulated by grasping the handle, thereby releasing the plunger from the ratchet and enabling the beam of light to be elevated or depressed 45 degrees from the horizontal. Upon releasing the spring grip lever the searchlight is automatically locked in position. It can be revolved horizontally whenever desired, by merely turning without grasping the spring grip lever.

Within the pedestal are contact rings through which electrical contact is made, thereby eliminating all loose wires. The contact rings and plungers are made of brass and perfect contact is always assured, as the plungers are held firmly against the rings by stiff helical springs. The plungers are a part of the removable contact binding post and can be removed by unscrewing the threaded collar.

The searchlight is mounted on a pedestal containing ball bearings, thereby making it very easy to direct the beam of light to the desired point.

Type SDX searchlights have the same optical system as the types SDA and SDE projectors, and the same illumination data applies.

TYPE SDX INCANDESCENT SEARCHLIGHTS

Long Range

12-Inch Reflector, 250-Watt Lamp

16-Inch Reflector, 500-Watt Lamp

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: Crystal glass, 12 or 16-inch. See page 27.

MOUNTING: Pedestal, cast-iron.

FOCUSING MECHANISM: One-way, operated by thumb wheel on back of case.

LAMP RECEPTACLE: Porcelain medium screw base for 12-inch (Cat. No. HL6019); Mogul for 16-inch (Cat. No. HL7136).

WIRE: 2 feet No. 14 gauge stranded, weatherproof wire.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged at top with one spring catch for 12-inch, and two spring catches for 16-inch (Cat. Nos.: 12-inch, HL8770; 16-inch, HL7886).

LENS: Clear, convex, heat-resisting. Spread, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: SDX12—250-watt, G-30; SDX16—500-watt, G-40. See page 34 for lamp data.

CONTROL: Lever. Control lever, quadrant, and stem are brass.

DIMENSIONS: See page 42.

FINISH: Baked black enamel.

NET WEIGHTS: SDX12, 72 lbs.; SDX16, 88 lbs.

SHIPPING WEIGHTS: SDX12, 112 lbs.; SDX16, 156 lbs.

Style	Catalog Number	List Prices
SDX12—250-Watt Searchlight—12-Inch Reflector		
SDX12 Searchlight with Crystal Glass Mirror Reflector	29779	On Request
SDX16—500-Watt Searchlight—16-Inch Reflector		
SDX16 Searchlight with Crystal Glass Mirror Reflector	29830	On Request

Length of standard control stem below base, 5 inches. Extra length control stems can be furnished in either iron or brass, if specifically ordered, at the following advances in list prices:

Up to	1 ft.	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.
Price, in Iron	\$3.75	\$5.75	\$ 7.75	\$11.50	\$15.00	\$23.00	\$30.00	\$38.00
Price, in Brass	5.75	8.50	11.50	17.00	23.00	34.00	45.00	57.00

Focusing Directions, pages 32 and 33. Illumination Data, page 36.

TYPES DCE18 AND DCX18 INCANDESCENT SEARCHLIGHTS

Long Range

18-Inch Reflector

1500-Watt Lamp



Type DCE18



Type DCX18

Types DCE18 and DCX18 incandescent searchlights differ only in their forms of mounting. Type DCX18 is designed to mount on the pilot house of a boat or the roof of a watch tower. It is controlled from below by means of a lever.

For the maximum results with an incandescent searchlight, low voltage lamps are recommended. The 1500-watt, G-40 lamp is particularly recommended. The low voltage filament is wound in a smaller space and burns at a higher temperature, due to the higher current passing through it. The very much narrower beam and the higher beam candle power obtained easily warrant the small extra expense of the necessary transformer.

HOUSING: Lead coated Armco Iron or Keystone Copper Steel, weatherproof.

REFLECTOR: Crystal glass, 18-inch commercial precision mirror. See page 27.

MOUNTINGS: Type DCE18, steel trunnion on cast-iron base. Type DCX18, cast-iron, pedestal.

FOCUSING MECHANISM: Two-way, operated by knurled wheels on bottom of case.

LAMP RECEPTACLE: Mogul screw base for 115-volt lamps or 900-watt, 32-volt lamp (Cat. No. HL8751). Special 2-prong receptacle for 1500-watt, 32-volt lamp (Cat. No. HL9489).

WIRING CONNECTIONS: Two leads stranded, weatherproof wire for type DCE18. Connections made to searchlight with contact rings located in the pedestal for type DCX18, except when furnished for 32-volt lamps, in which case, flexible leads are used.

LOUVERS: Circular louvers can be supplied when it is necessary to eliminate all direct lamp rays. Prices on application.

DOOR FRAME: Lead coated Armco Iron or Keystone Copper Steel, hinged at top with two spring catches (Cat. No. HL9531).

LENS: Clear, convex, heat-resisting. See pages 28 and 29.

LAMPS: 32-volt—1500-watt, G-40, or 900-watt, T-20. 110-volt—1000 or 1500-watt, G-40 or T-20. See page 34 for lamp data.

DIMENSIONS: See page 44 for type DCE, and page 42 for type DCX.

FINISH: Baked black enamel.

NET WEIGHTS: DCE18, 77 lbs.; DCX18, 120 lbs.

SHIPPING WEIGHTS: DCE18, 116 lbs.; DCX18, 225 lbs.

ROTATING STAND: A rotating stand for advertising purposes can be furnished. Prices on application.

Style	Catalog Number	List Prices
DCE18 Searchlight with Mogul Base Receptacle	40505	On Request
DCE18 Searchlight with Two-Prong Base Receptacle	40506	
DCX18 Searchlight with Mogul Base Receptacle	40507	
DCX18 Searchlight with Two-Prong Base Receptacle	40508	

Focusing Directions, pages 32 and 33.

Note: Length of standard control stem for DCX18 below base is five inches. Extra lengths of control stem can be furnished at the additional prices given on page 13.

TYPE RME FLOODLIGHTS

Short and Medium Range

10-Inch Reflector, 60 to 100-Watt Lamps

12-Inch Reflector, 150 or 200-Watt Lamps



Type RME
With Clear, Convex Glass in Door

Type RME is a rugged, cast-iron floodlight for portable use. It is used where it is desired to "transport the light to the job." It is invaluable around railroad shops and yards where repairs must be made to heavy apparatus, and a strong light is necessary. It can be used to great advantage when working under cars and locomotives.

It is strong and rugged, yet it is light enough to be transported easily.

Since this floodlight is portable, it is generally used close to the work and for that reason a wide angle of light is desirable. This floodlight with white enameled steel reflector is particularly recommended. However, in some cases, a long, narrow beam of light is desired and this may be obtained by using the hammered glass reflector.

Type RME floodlight has the same illumination characteristics as types RM and RMU. See pages 16 and 17.

HOUSING: Cast-iron, gas and moistureproof.

REFLECTOR: Porcelain enameled steel or hammered glass, 10 or 12-inch. See page 27.

MOUNTING: Trunnion.

FOCUSING MECHANISM: Lamp receptacle mounted on bracket, adjustable with screw driver.

LAMP RECEPTACLE: Porcelain medium screw base (Cat. No. HL674).

WIRE: Two 3-foot leads No. 14 gauge stranded, weather-proof wire.

DOOR FRAME: Cast-iron, gasketed to exclude gas, moisture, and dust from interior. Held in place by three swivel bolts with capped wing nuts (Cat. Nos.: 10-inch, HL5305; 12-inch, HL5317).

LENS: Clear, convex, heat-resisting. Spread or diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: RME10—60-watt to 100-watt in A bulb. RME12—150-watt or 200-watt in PS bulb. See page 34 for lamp data.

DIMENSIONS: See page 44.

FINISH: Baked black enamel.

NET WEIGHTS: RME10, 35 lbs.; RME12, 45 lbs.

SHIPPING WEIGHTS: RME10, 53 lbs.; RME12, 63 lbs.

Type	Reflector*	Lamp	Mounting	Catalog Number	List Prices
RME10	Porcelain Enameled	60 to 100 Watts	Trunnion	29803	On Request
RME10	Hammered Glass	60 to 100 Watts	Trunnion	40411	
RME12	Porcelain Enameled	150 or 200 Watts	Trunnion	29480	
RME12	Hammered Glass	150 or 200 Watts	Trunnion	40412	

*Reflector: Use white enameled reflector for wide spread beam and very short range. The hammered glass reflector concentrates the light for projection to a greater distance.

Illumination Data, page 36. **Special Bases and Brackets,** pages 30 and 31.

TYPES RM AND RMU FLOODLIGHTS

Short and Medium Range

10-Inch Reflector, 60 to 100-Watt Lamps

12-Inch Reflector, 150 or 200-Watt Lamps



Type RM12



Type RMU12
with Hood



Type RMU12

Types RM and RMU floodlights meet lighting requirements in roundhouses, steel mills, on construction work, or wherever stationary, strong, gas and moistureproof illuminating units are desired. When mounted in roundhouses or other buildings where corroding vapors circulate, they offer full protection against the damage to which exposed lights and wiring systems in such locations are subjected.

Type RM floodlights are designed for fastening to a flat surface and projecting light at right angles to the plane of the surface.

Type RMU floodlights have a universal wall bracket, which allows the beam of light to be directed where desired. By loosening the two cap screws that hold the supporting arm to the case, the floodlight may be elevated or depressed 15 degrees from the horizontal. Tightening these cap screws locks the floodlight in the desired position. By loosening the cap screw that fastens the swivel bracket to the wall bracket, the floodlight may be moved 15 degrees to the right or left. Tightening this cap screw locks the floodlight in the desired position.

A satisfactory lighting system for roundhouses requires three type RM or RMU floodlights for each stall. Two of these floodlights are mounted on the front wall, about eight feet from the floor, and at such an angle that the light rays cross and are directed to the working parts of engines. Thus, ample illumination is secured at the desired points, and an engineer bringing his engine into the roundhouse is not met by an objectionable glare. The third floodlight for each stall is located on the rear wall.

Considerable saving in current, without loss of adequate illumination, is possible by having an individual switch for the floodlights in each stall.

Among the many purposes to which these types of floodlights can be put and places where they can be mounted, to give the required illumination in steel mills, are on lorry, scale, and bin-filling cars; also:

To light the runway where skip cars dump into the hopper at the top of blast furnaces, the floodlight being mounted for this purpose on the bleeder stack or on structural iron work near the hopper;

To give light to operators attaching peel at charging boxes. Here the floodlight meets all needs when located at the front end of floor chargers;

To illuminate gauges and the approach tables in rolling mills. The floodlight for this purpose may be mounted at the operator's cage or on structural iron work adjacent to the rolls; and

To light crane yards, where no overhead lamps can be hung. In this instance, the floodlight should be on the crane cage. A new feature of the types RM and RMU floodlights is a cast hood, with the under surface porcelain enameled. This redirects light, which would otherwise be lost, down where it is required. The 12-inch hood is cast as part of the door. The 10-inch hood is detachable and can be attached to floodlights which are already installed. See page 27.

Orders for types RM and RMU floodlights should specify the exact wattage of the lamp to be used so that the receptacle may be properly adjusted. If this is not done, the floodlights will be adjusted for the highest wattage lamp which can be used in the floodlight ordered.

TYPES RM AND RMU FLOODLIGHTS

Short and Medium Range

10-Inch Reflector, 60 or 100-Watt Lamps

12-Inch Reflector, 150 or 200-Watt Lamps

HOUSING: Cast-iron, gas and moistureproof.

REFLECTOR: Porcelain enameled steel or hammered glass, 10 or 12-inch. See page 27.

MOUNTINGS: Type RM fastens to flat surface by four lugs on back. Type RMU has a universal wall bracket.

FOCUSING MECHANISM: Lamp receptacle mounted on bracket adjustable with screw driver.

LAMP RECEPTACLE: Porcelain medium screw base (Cat. No. HL674).

WIRING CONNECTION: $\frac{3}{4}$ -inch threaded hubs at top and bottom. A pipe plug is furnished to close the unused hub.

WIRE: Type RM, two 3-foot leads No. 14 gauge stranded, weatherproof wire. Type RMU, 30 inches of steel armored cable with two CGB238 connectors.

DOOR FRAME: Cast-iron, gasketed to exclude gas, moisture, and dust from interior. Held in place by three swivel bolts with capped wing nuts (Cat. Nos.: 10-inch, HL5305; 12-inch, HL5317).

LENS: Clear, convex, heat-resisting. Spread or diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 60-watt or 100-watt in A bulb for 10-inch floodlight. 150-watt or 200-watt in PS bulb for 12-inch floodlight. See page 34 for lamp data.

DIMENSIONS: See page 45.

FINISH: Baked black enamel.

NET WEIGHTS: RM10, 20 lbs.; RM12, 30 lbs.; RMU10, 27 lbs.; RMU12, 37.5 lbs.

SHIPPING WEIGHTS: RM10, 38 lbs.; RM12, 48 lbs.; RMU10, 56 lbs.; RMU12, 62 lbs.

Type	Reflector*	Lamp	Mounting	Catalog Number	List Prices
RM10	Porcelain Enameled	60 or 100 Watts	Rigid	29788	On Request
RM10	Hammered Glass	60 or 100 Watts	Rigid	40407	
RM12	Porcelain Enameled	150 or 200 Watts	Rigid	26067	
RM12	Hammered Glass	150 or 200 Watts	Rigid	40408	
RMU10	Porcelain Enameled	60 or 100 Watts	Wall Bracket	29793	
RMU10	Hammered Glass	60 or 100 Watts	Wall Bracket	40409	
RMU12	Porcelain Enameled	150 or 200 Watts	Wall Bracket	29657	
RMU12	Hammered Glass	150 or 200 Watts	Wall Bracket	40410	

*Reflector: Use white enameled reflector for wide spread beam and very short range. The hammered glass reflector concentrates the light for projection to a greater distance.

Hoods, page 27. Illumination Data, page 36.



RMU Floodlight Installation—Roundhouse

TYPE FDV12 FLOODLIGHT

For Fountain Use

12-Inch Reflector

500-Watt Lamp



Type FDV12

Type FDV12 was designed especially for lighting fountains. The floodlight can be immersed in water, providing the lens is not covered by more than a few inches of water. Provision is made for raising the unit above the water for relamping.

It is absolutely essential to provide a permanent drain for any floodlight which is under water or which has water falling on it. Type FDV12 is provided with a tapped hole for connection to flexible drain hose.

HOUSING: Cast-aluminum alloy, watertight.

REFLECTOR: Crystal glass, 12-inch. See page 27.

MOUNTING: Pedestal which can be raised for relamping; quadrant or trunnion mounting can be furnished, if desired. Prices on application.

FOCUSING MECHANISM: One-way, operated from inside of unit.

LAMP RECEPTACLE: Porcelain Mogul (Cat. No. HL7136).

WIRING CONNECTIONS: A watertight stuffing box is provided with rubber bushing to clamp cable from $\frac{1}{2}$ to $\frac{5}{8}$ inches in diameter.

DOOR FRAME: Cast-aluminum alloy, held against housing by six clamps.

LENS: Clear, convex, heat-resisting. Colored, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 500-watt, G-40, 115-volt. Projector can be arranged for use with 250-watt, G-30, 115-volt lamp, if desired. See page 34 for lamp data.

DIMENSIONS: See page 43.

DRAIN: A $\frac{1}{2}$ -inch tapped hole is provided in the bottom of the case for connection to flexible hose.

FINISH: Case, natural aluminum; base and pedestal, galvanized.

NET WEIGHT: 35 lbs.

SHIPPING WEIGHT: 65 lbs.

Style	Catalog Number	List Price
FDV12	40515	On Request

TYPE RRU FLOODLIGHT PROJECTOR

Medium Range

11 $\frac{5}{8}$ -Inch Reflector

200-Watt Lamp



Type RRU
Side View



Type RRU
Front View

Type RRU floodlight projector is used extensively for lighting roundhouses, turntables, etc., and as a portable unit, especially around railroad shops and yards. It is regularly furnished with a hammered glass reflector, which produces a wide, even beam of light. If a narrower beam of higher intensity is desired, this floodlight will be furnished with a smooth glass reflector without extra charge, if specified on the order.

HOUSING: Cast-iron, weatherproof.

REFLECTOR: Crystal glass in smooth or hammered surfaces, 11 $\frac{5}{8}$ -inch. The hammered reflector is furnished unless otherwise specified on the order. See page 27.

MOUNTING: Adjustable, with malleable iron base that can be bent to fit any surface.

FOCUSING MECHANISM: Lamp receptacle is mounted on a hinged bracket, and can be moved in or out by grasping the lamp bulb.

LAMP RECEPTACLE: Composition medium screw base (Cat. No. HL7592).

WIRE: Two leads No. 14 gauge stranded, weatherproof wire.

DOOR FRAME: Cast-iron, hinged at bottom (Cat. No. HL8781).

LENS: Clear, convex, heat-resisting. See pages 28 and 29.

LAMP: 200-watt, PS-30 bulb. See page 34 for lamp data.

DIMENSIONS: See page 42.

FINISH: Galvanized.

NET WEIGHT: 30 lbs.

SHIPPING WEIGHT: 50 lbs.

Style	Catalog Number	List Price
RRU Projector	40304	On Request

Bracket Mounting Arm, pages 30 and 31. Illumination Data, page 36.

TYPES PS-2 AND PS-5 FLOODLIGHT PROJECTORS

Medium Range

11 $\frac{7}{8}$ -Inch Reflector, 200-Watt Lamp

13 $\frac{7}{8}$ -Inch Reflector, 500-Watt Lamp



Type PS-2



Type PS-5

Types PS-2 and PS-5 floodlight projectors differ only in size. They are used for lighting areas which are located comparatively close to the projector, such as factory yards, building fronts, amusement parks, swimming pools, trapshooting ranges, etc. The reflectors are designed to intercept and direct into the beam the maximum possible amount of the light of the lamp. The hammered surface eliminates the filament images and the uneven appearance of the beam which are generally produced by the large filament of a standard lighting service lamp, and leaves a beam which is wider but much more uniform.

HOUSING: Cast-aluminum, weatherproof.

REFLECTOR: Crystal glass, hammered surface, 11 $\frac{7}{8}$ -inch for PS-2 and 13 $\frac{7}{8}$ -inch for PS-5. See page 27.

MOUNTING: Adjustable, with malleable iron base that can be bent to fit any surface.

FOCUSING MECHANISM: Hand operated from the outside of the case.

LAMP RECEPTACLE: Medium screw base for PS-2 (Cat. No. HL7592); composition Mogul for PS-5 (Cat. No. HL8755).

WIRE: Two leads No. 14 gauge stranded, weatherproof wire.

DOOR FRAME: Hinged to case (Cat. Nos.: PS-2, HL8779; PS-5, HL8778).

LENS: Clear, convex, heat-resisting. See pages 28 and 29.

LAMPS: 200-watt, PS bulb for PS-2, and 300 or 500-watt, PS bulb for PS-5 projector. See page 34 for lamp data.

DIMENSIONS: See page 42.

FINISH: Case, natural aluminum; base, galvanized.

NET WEIGHTS: PS-2, 18 lbs.; PS-5, 20 lbs.

SHIPPING WEIGHTS: PS-2, 38 lbs.; PS-5, 50 lbs.

Type	Catalog Number	List Prices
PS-2 Projector	40302	On
PS-5 Projector	40301	Request

Bracket Mounting Arm, pages 30 and 31. Focusing Directions, pages 32 and 33. Illumination Data, page 36.

TYPES G-250 AND G-5 FLOODLIGHT PROJECTORS

Long Range

11 $\frac{7}{8}$ -Inch Reflector, 250-Watt Lamp

13 $\frac{7}{8}$ -Inch Reflector, 500-Watt Lamp



Type G-250



Type G-5

Types G-250 and G-5 floodlight projectors differ only in size. They use concentrated filament lamps and have fairly narrow beams. They are useful and efficient for lighting small areas and are used extensively for lighting statues and signs.

HOUSING: Cast-aluminum, weatherproof.

REFLECTOR: Crystal glass, 11 $\frac{7}{8}$ -inch for G-250, and 13 $\frac{7}{8}$ -inch for G-5. See page 27.

MOUNTING: Adjustable, with malleable iron base that can be bent to fit any surface.

FOCUSING MECHANISM: Hand operated from the outside of the case.

LAMP RECEPTACLE: Medium screw base for G-250 (Cat. No. HL7592); composition Mogul for G-5 (Cat. No. HL8755).

WIRE: Two leads No. 14 gauge stranded, weatherproof.

DOOR FRAME: Hinged to case (Cat. Nos.: G-250, HL8779; G-5, HL8778).

LENS: Clear, convex, heat-resisting. See pages 28 and 29.

LAMPS: 250-watt, G-30 for G-250, and 500-watt, G-40 for G-5 projector. See page 34 for lamp data.

DIMENSIONS: See page 42.

FINISH: Case, natural aluminum; base, galvanized.

NET WEIGHTS: G-250, 17 lbs.; G-5, 28 lbs.

SHIPPING WEIGHTS: G-250, 38 lbs.; G-5, 50 lbs.

Style	Catalog Number	List Prices
G-250 Projector	40300	On
G-5 Projector	40299	Request

Bracket Mounting Arm, pages 30 and 31. Focusing Directions, pages 32 and 33. Illumination Data, page 36.

INDUSTRIAL LIGHTING EQUIPMENT

It has long been recognized that the use of a rather high intensity of general illumination increases production, reduces accidents, and makes working conditions more agreeable in any type of industry. The speed of vision depends on the intensity of light present. A good lighting installation always pays good dividends, and costs very little in comparison with the cost of other equipment.

Efficient lighting systems have been made practical by the use of efficient reflectors. Cheap and poorly designed reflectors are a poor investment. A good reflector is efficient in the distribution of light only when it is clean. A thin film of dirt will reduce the output of the best reflector very seriously. The Crouse-Hinds line of Industrial Lighting Equipment is designed to protect the reflecting surface from dirt. An open reflector requires frequent cleaning. This means high maintenance cost, and, in the case of porcelain enameled reflectors, frequent cleaning may in time damage the surface. Crouse-Hinds Industrial Lighting Units are dust and gas-tight. The smooth surface of the convex lens does not collect dirt easily, and is very easily and quickly cleaned.

Installation: Type UNJ fixture hangers, which have a ball-and-socket joint, are recommended in conjunction with Industrial Lighting Units, as they allow the unit to hang plumb and relieve the conduit system of strain in case they are subjected to a shock. Type UNJC fixture hangers are recommended where fixtures are subject to vibration. They provide a spring cushion which protects the lamp filament from vibration and prolongs the life of the lamps. See Bulletin 2102 for complete description and prices. Disconnecting hangers are available by means of which the units can be lowered for servicing. These are especially valuable where the units are relatively inaccessible.



Industrial Lighting Unit Installation—Machine Shop

TYPE RAS INDUSTRIAL LIGHTING UNITS

12-Inch Reflector, 100-Watt Lamp

14-Inch Reflector, 200-Watt Lamp

16-Inch Reflector, 500-Watt Lamp



Type RAS16



Enclosing Door and Frame for Type RAS16

Type RAS Industrial Lighting Units are supplied in three sizes: 12, 14, and 16-inch. The reflectors are standard RLM reflectors. The enclosing doors and frames are listed separately in order that the enclosed feature may be applied to existing open reflector installations of 12, 14, and 16-inch reflectors.

HOUSING: Standard RLM reflectors, enameled on inner and outer surfaces, with rigid cast frame clamped with gaskets to the bead of the reflector, with sealing compound around top gasket. Type RAS16 has a special casting on the top which allows 300 or 500-watt lamps to be used.

REFLECTOR: Porcelain enameled steel, 12, 14, or 16-inch.

MOUNTING: Suspension.

LAMP RECEPTACLE: Medium screw base for RAS12 and RAS14; Mogul screw base for RAS16.

DOOR FRAME: Cast-iron for RAS12; cast-aluminum alloy for RAS14 and RAS16. Door frame is clamped against a heavy gasket by three clamps on RAS12 and RAS14, and four clamps on RAS16.

LENS: Clear, convex, heat-resisting. Diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 75 to 150-watt, PS or A bulbs for RAS12; 150 or 200-watt, PS bulb for RAS14; 300 or 500-watt, PS bulb for RAS16. See page 34 for lamp data.

DIMENSIONS: See page 45.

FINISH: Door and frame, RAS12, galvanized; RAS14 and RAS16, natural aluminum.

NET WEIGHTS	Type Complete Units	SHIPPING WEIGHTS
15 lbs.	RAS12	35 lbs.
17 lbs.	RAS14	42 lbs.
21 lbs.	RAS16	48 lbs.
Doors and Frames Only		
13 lbs.	RAS12	33 lbs.
15 lbs.	RAS14	36 lbs.
16 lbs.	RAS16	42 lbs.

Style	Catalog Number	List Prices
Complete Units		
RAS12 with Clear, Convex, Heat-Resisting Lens	29808	On Request
RAS14 with Clear, Convex, Heat-Resisting Lens	40402	
RAS16 with Clear, Convex, Heat-Resisting Lens	40405	
Doors and Frames Only		
For RAS12	29809	On Request
For RAS14	40403	
For RAS16	40406	

TYPES RLS AND RLU INDUSTRIAL LIGHTING UNITS

12-Inch Reflector, 75 to 200-Watt Lamps

16-Inch Reflector, 300 to 500-Watt Lamps



Type RLS
Suspension Mounting



Type RLU
Universal Wall Bracket

Types RLS and RLU Industrial Lighting Units meet lighting requirements in roundhouses, steel mills, or wherever a strong, stationary, gas and moistureproof illuminating unit is desired. When mounted in roundhouses or other buildings where corroding vapors circulate, they offer full protection against the damage to which exposed lights and wiring systems in such locations are subjected.

The cast-iron suspension type has been so designed that it can be guyed if it seems advisable. To install the suspension type, take off the cover by removing the two cap screws, thereby giving access to the binding posts to which the circuit wires are to be attached. The universal wall bracket type is a design that enables the unit to be placed where most convenient and the light then to be directed where desired. By loosening the two cap screws that hold the supporting arm to the case, the unit can be tipped outward 15 degrees from the mounting surface. Tightening these cap screws locks the unit in the desired position. By loosening the cap screw that fastens the swivel bracket to the wall bracket, the unit may be moved 15 degrees to the right or left. Tightening this cap screw locks it in the desired position.

The case itself is gasproof, but in case the lens is accidentally broken no gas can get into the conduit system, because the cover compartment itself is gasproof.

The unit is so designed that the lamp does not become excessively heated, and the circulation of air around the lamp and reflector is uniformly maintained. Asbestos gaskets are used throughout, as they are not affected by gases.

The use of a skeleton socket has a tendency to keep the base of the lamp cooler on account of the freer circulation of air. Types RLS and RLU units have the same light distribution as type RAS, listed on page 23.

TYPES RLS AND RLU INDUSTRIAL LIGHTING UNITS

12-Inch Reflector, 75 to 200-Watt Lamps

16-Inch Reflector, 300 to 500-Watt Lamps

HOUSING: Cast-iron or cast-aluminum, gas and moisture-proof.

REFLECTOR: Porcelain enameled steel, 12 or 16-inch. See page 27.

MOUNTINGS: Type RLS, suspension. Type RLU, universal wall bracket.

LAMP RECEPTACLE: Medium screw for 12-inch (Cat. No. HL8079); Skeleton Mogul for 16-inch (Cat. No. HL7012).

WIRING CONNECTION: Type RLS, direct to conduit by 3/4-inch pipe. Type RLU connects to conduit by a flexible, steel armored cable, and two CGB238 connectors, making a gas and vaporproof connection.

DOOR FRAME: Cast-iron or cast-aluminum, held against a heavy asbestos gasket by three swivel bolts and capped wing nuts. Door is hinged on one side (Cat. Nos.: 12-inch, cast-iron, HL8070; cast-aluminum, HL8071. 16-inch, cast-iron, HL7740; cast-aluminum, HL7959).

LENS: Clear, convex, heat-resisting. Diffusing, convex, heat-resisting lens can be furnished. See pages 28 and 29.

LAMPS: 75 to 200-watt, PS bulbs for 12-inch unit; 300 to 500-watt, PS bulbs for 16-inch unit. See page 34 for lamp data.

DIMENSIONS: See page 45.

FINISH: Cast-aluminum, natural aluminum; cast-iron, black enamel.

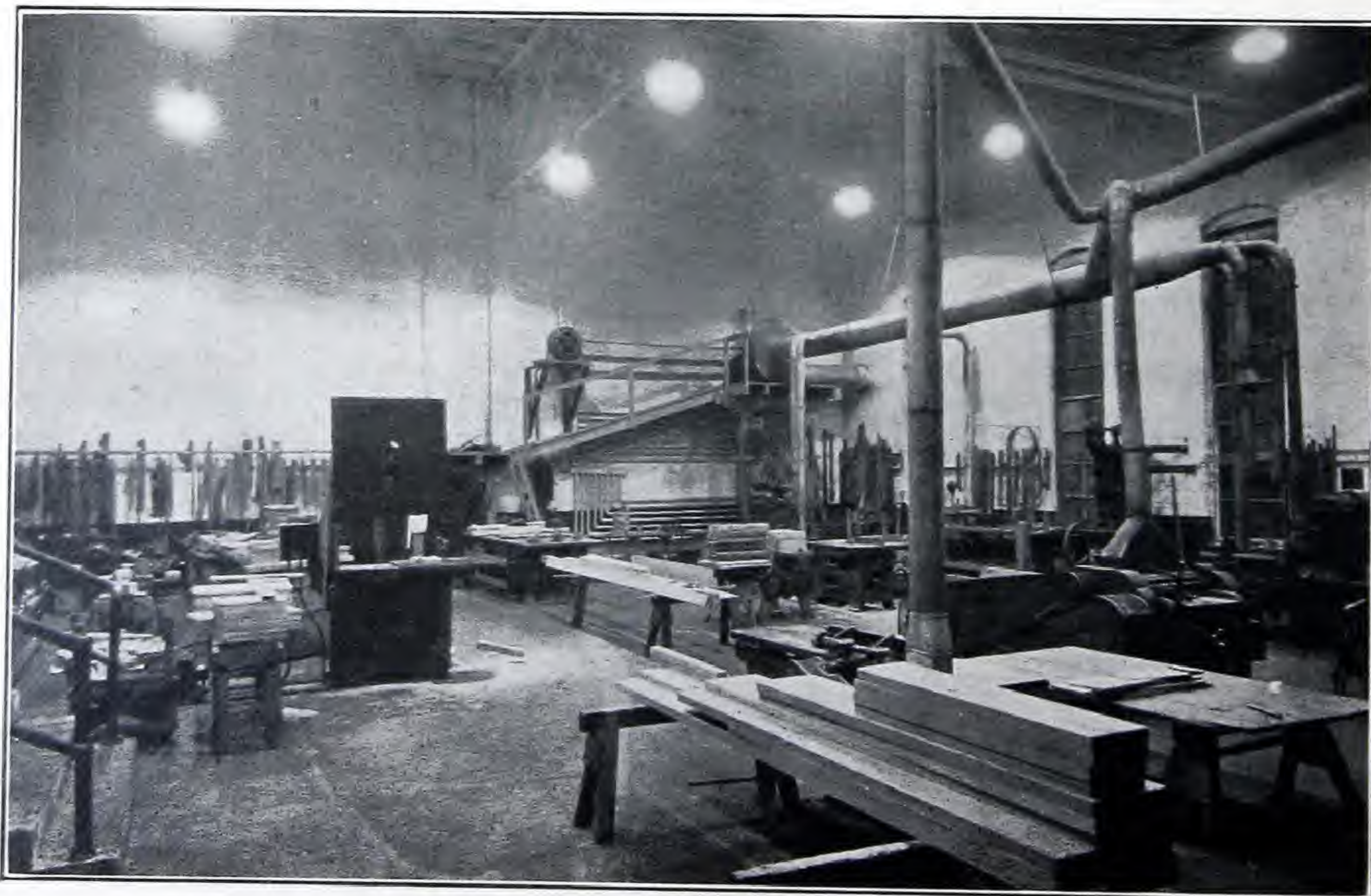
NET WEIGHTS	Type	SHIPPING WEIGHTS
	Cast-Iron	
40 lbs.	RLS12	65 lbs.
64 lbs.	RLS16	104 lbs.
47 lbs.	RLU12	72 lbs.
73 lbs.	RLU16	113 lbs.
	Cast-Aluminum	
20 lbs.	RLS12	44 lbs.
32 lbs.	RLS16	72 lbs.
28 lbs.	RLU12	53 lbs.
42 lbs.	RLU16	82 lbs.

Type	Lamp		Mounting	Case	Catalog Number	List Prices
	Watts	Bulb				
RLS12	75 or 100	PS or A	Suspension	Cast-Iron	29769	On Request
RLS12	150	PS-25	Suspension	Cast-Iron	29768	
RLS12	200	PS-30	Suspension	Cast-Iron	29767	
RLS12	75 or 100	PS or A	Suspension	Cast-Aluminum	29775	
RLS12	150	PS-25	Suspension	Cast-Aluminum	29774	
RLS12	200	PS-30	Suspension	Cast-Aluminum	29773	
RLU12	75 or 100	PS or A	Wall Bracket	Cast-Iron	29772	
RLU12	150	PS-25	Wall Bracket	Cast-Iron	29771	
RLU12	200	PS-30	Wall Bracket	Cast-Iron	29770	
RLU12	75 or 100	PS or A	Wall Bracket	Cast-Aluminum	29778	
RLU12	150	PS-25	Wall Bracket	Cast-Aluminum	29777	
RLU12	200	PS-30	Wall Bracket	Cast-Aluminum	29776	
RLS16	300 to 500	PS-40	Suspension	Cast-Iron	29726	
RLS16	300 to 500	PS-40	Suspension	Cast-Aluminum	29732	
RLU16	300 to 500	PS-40	Wall Bracket	Cast-Iron	29729	
RLU16	300 to 500	PS-40	Wall Bracket	Cast-Aluminum	29735	

INDUSTRIAL LIGHTING UNITS



Industrial Lighting Unit Installation—Machine Shop



Industrial Lighting Unit Installation—Woodworking Shop

REFLECTORS

Diameter	Used on Types	Catalog Number	List Price, each
Smooth Glass Reflectors			
9 $\frac{5}{8}$ "	(Molded) LDA10, LDE10, SDA10, SDE10	HL6032	\$17.50
9 $\frac{5}{8}$ "	(Blown) LDA10, LDE10, SDA10, SDE10	HL9075	12.00
11 $\frac{5}{8}$ "	RRU	HL8739	17.00
11 $\frac{7}{8}$ "	G-250	HL8740	23.00
12"	FDV12, LDA12, LDE12, SDA12, SDE12, SDX12	HL6325	30.00
12"	LCA12, LCE12	HL9022	20.00
13 $\frac{7}{8}$ "	G-5	HL8743	26.50
16"	LDA16, LDE16, SDA16, SDE16, SDX16	HL6858	75.00
16"	LCA16, LCE16	HL9014	30.00
18"	DCE18, DCX18	HL9519	100.00
19 $\frac{1}{2}$ "	LCE20	HL9015	50.00
24"	LCE24	HL8518	60.00

Hammered Glass Reflectors

9 $\frac{5}{8}$ "	RM10, RME10, RMU10	HL9183	\$12.00
11 $\frac{5}{8}$ "	RRU	HL8744	17.00
11 $\frac{7}{8}$ "	PS-2	HL8745	23.00
12"	LCA12, LCE12	HL9116	20.00
12"	RM12, RME12, RMU12	HL9181	18.00
13 $\frac{7}{8}$ "	PS-5	HL8747	26.50
16"	LCA16, LCE16	HL9117	30.00
19 $\frac{1}{2}$ "	LCE20	HL9118	50.00
24"	LCE24	HL9119	60.00

Diffusing Reflectors—Aluminized Metal

16"	ECA16, ECE16	HL8595	\$15.00
16"	BCA16, BCE16	HL8540	15.00

Porcelain Enameled Steel Reflectors

10"	RM10, RME10, RMU10	HL806	\$ 4.25
12"	RM12, RME12, RMU12	HL5322	9.00
12"	RLS12, RLU12	HL8086	3.00
16"	RLS16, RLU16	HL7867	11.00

HOODS

Used on Types	Catalog Number	List Price, each	Catalog Number	List Price, each
	Cast-Iron		Cast-Aluminum Alloy	
LCE12	HL9211	\$ 9.50	HL9072	\$12.00
LCE16	HL9212	13.00	HL9073	16.00
LCE20			HL9074	20.00
LCE24			HL8757	25.00
Porcelain Enameled				
*12" RM, RMU	HL8622	Add \$17.00 to list price of floodlight		
10" RM, RMU	HL9093	Add 8.50 to list price of floodlight		

*Hood is cast as part of door frame.

LENSES



Fig. 1
Convex Diffusing Lens



Fig. 2
Convex Spread Lens

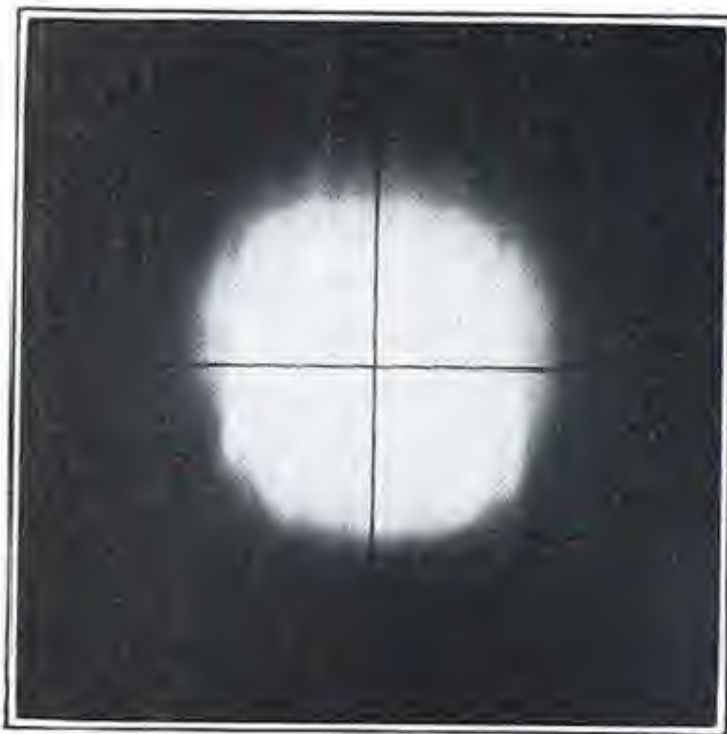


Fig. 3
Light Spot with Clear Lens

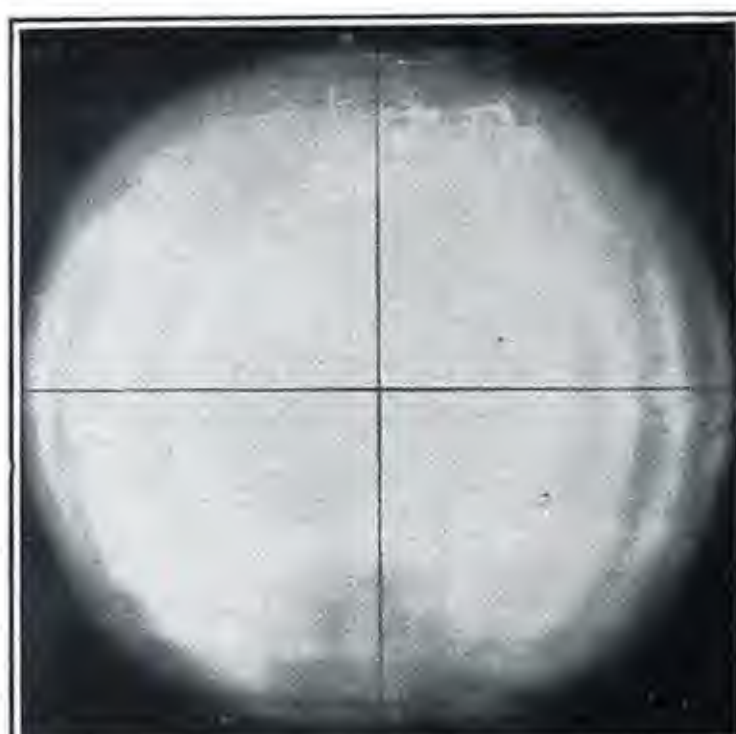


Fig. 4
Corresponding Light Spot
with Diffusing Lens



Fig. 5
Corresponding Light Spot
with Spread Lens

Standard Clear Lenses

All floodlight projectors listed in this catalog are supplied with clear, convex, heat-resisting lenses. Unless another lens is specified on the order, clear lenses will be furnished. The clear lens does not alter the beam spread of the floodlight in any way.

Light Control Lenses

It is often desirable to increase the natural spread of a floodlight beam either in all directions or in one direction only. To meet this condition, the Crouse-Hinds Company can supply two different types of lenses as described below. These can be supplied for all floodlight projectors except types DCE18, DCX18, G-250, G-5, PS-2, PS-5, and RRU. They will be supplied with projectors 16 inches in diameter or smaller, without extra charge. A small additional charge is made for those lenses which are larger than 16 $\frac{1}{16}$ inches. See page 29.

Spread Lenses

The convex, heat-resisting, spread lens is shown in Fig. 2. This lens spreads the light at right angles to the direction of the ribs, leaving the spread in the other direction the same. The resulting beam is elliptical in shape, as shown in Fig. 5. When the ribs are vertical, the beam is spread horizontally and when they are horizontal, the beam is spread vertically. The lens can be set at the factory for either spread, and the order should specify which is desired. This type of lens is very useful when lighting rectangular areas. The nominal beam spread produced with the standard spread lens is 45 to 50 degrees. The actual beam spread depends on the characteristics of the floodlight with which the lens is used. These values are given in the table of Illumination Data on page 36.

LENSES

Diffusing Lenses

The convex, heat-resisting, diffusing lens is shown in Fig. 1. This lens spreads the natural beam both horizontally and vertically, giving a larger light spot as shown in Fig. 4. This lens is used where the natural spread from the floodlight is not sufficient to cover the area desired. The actual beam spread in degrees produced with different floodlights is shown in the table of Illumination Data on page 36. Diffusing lenses should not be ordered with types SDA, SDE, or with any projector arranged for use with concentrated filament lamps. The concentrated filament lamps are used to secure a narrow beam spread, and if a wider beam is desired, a floodlight using standard PS bulb lamps should be used.

Standard Clear, Convex, Heat-Resisting

Diameter	Used on Types	Catalog Number	List Price, each
9 $\frac{5}{8}$ "	SDA10, SDE10	HL6800	\$ 4.50
10"	LDA10, LDE10, RM10, RME10, RMU10	HL6813	5.00
11 $\frac{3}{4}$ "	RRU	HL8735	7.25
12"	FDV12, LCA12, LCE12, LDA12, LDE12, RAS12, RLS12, RLU12, RM12, RME12, RMU12, SDA12, SDE12, SDX12	HL6802	7.40
12 $\frac{1}{2}$ "	G-250, PS-2	HL8736	8.75
14"	RAS14	HL9151	9.00
15 $\frac{1}{16}$ "	G-5, PS-5	HL8738	10.25
16 $\frac{7}{16}$ "	BCA16, BCE16, ECA16, ECE16, LCA16, LCE16, LDA16, LDE16, RAS16, RLS16, RLU16, SDA16, SDE16, SDX16	HL6804	10.50
19"	DCE18, DCX18	HL9520	18.00
20"	LCE20	HL9016	20.00
24 $\frac{1}{2}$ "	LCE24	HL8519	45.00

Spread, Convex, Heat-Resisting

Diameter	Used on Types	Catalog Number	List Price, each	
			Purchased Separately	Additional if Supplied in Floodlight
9 $\frac{5}{8}$ "	SDA10, SDE10	HL6812	\$ 4.50	No Extra
10"	LDA10, LDE10, RM10, RME10, RMU10	HL6815	5.00	No Extra
12"	LCA12, LCE12, LDA12, LDE12, RM12, RME12, RMU12, SDA12, SDE12, SDX12	HL6811	7.40	No Extra
16 $\frac{7}{16}$ "	LCA16, LCE16, LDA16, LDE16, SDA16, SDE16, SDX16	HL6810	10.50	No Extra
20"	LCE20	HL9018	29.00	\$ 9.00
24 $\frac{1}{2}$ "	LCE24	HL9021	57.00	12.00

Diffusing, Convex, Heat-Resisting

Diameter	Used on Types	Catalog Number	List Price, each	
			Purchased Separately	Additional if Supplied in Floodlight
9 $\frac{5}{8}$ "	SDA10, SDE10	HL6801	\$ 4.50	No Extra
10"	LDA10, LDE10, RM10, RME10, RMU10	HL6814	5.00	No Extra
12"	LCA12, LCE12, RAS12, RLS12, RLU12, RM12, RME12, RMU12	HL6803	7.40	No Extra
14"	RAS14	HL9153	9.00	No Extra
16 $\frac{7}{16}$ "	BCA16, BCE16, ECA16, ECE16, LCA16, LCE16, RAS16, RLS16, RLU16	HL6805	10.50	No Extra
20"	LCE20	HL9017	29.00	\$ 9.00
24 $\frac{1}{2}$ "	LCE24	HL9020	57.00	12.00

Colored Lenses

Colored heat-resisting lenses can be furnished in some sizes and colors. Prices on request.

Cement for Lenses

The lenses of all floodlights and industrial lighting units listed in this catalog are cemented to the door with a special plastic cement which does not dry out. The amount of cement required for the various sizes of lenses is as follows:

Lens Diameter	Approximate Cement Required
Up to 12"	2 oz.
12 to 16"	3 oz.
16 to 20"	4 oz.
24"	6 oz.

Cement for Lenses

Catalog Number HL9012

\$1.50 per pound, list price

SPECIAL BASES AND BRACKETS



Fig. 6
Floodlight with
Bolt Base



Fig. 7
Floodlight with
Short Pole Bracket



Fig. 8
Floodlight with
Pedestal Base

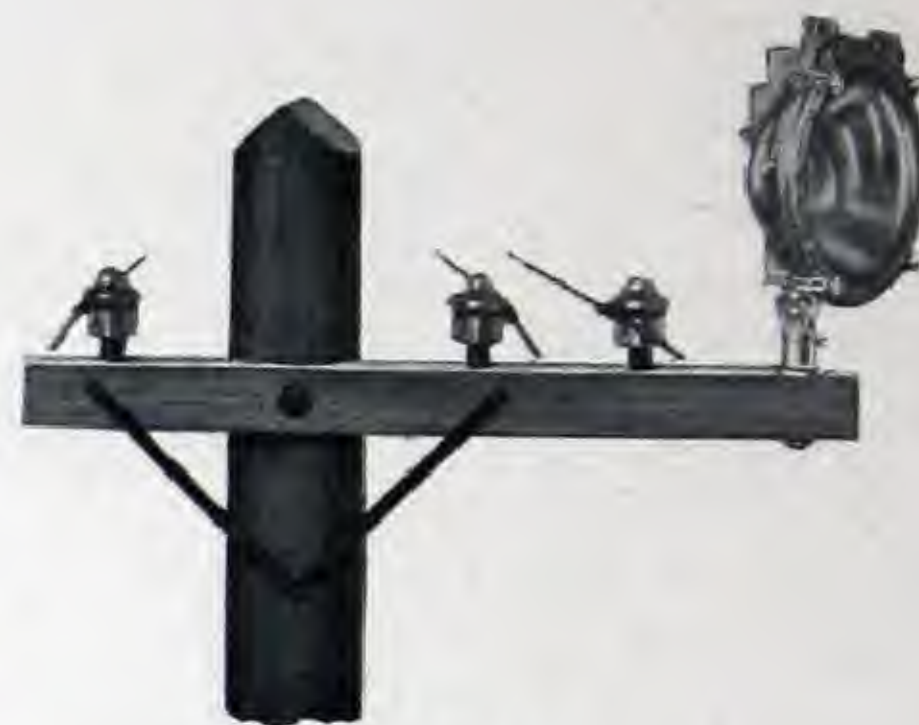


Fig. 9
Floodlight with
Cross Arm Base



Fig. 10
Floodlight with
Wheel Base



Fig. 11
Floodlight with
Bracket Mounting Arm



Fig. 12
Floodlight with
4-Inch Slip Fitter Base



Fig. 13
Floodlight with
2 1/2-Inch Slip Fitter Base

There are cases where one of the above special bases or brackets is required for making the best installation of projectors. Each of these has been designed to meet a special type of installation as described in the following paragraphs. Any of these bases and brackets except HL8718, bracket mounting arm, may be used with type BCA, BCE, ECA, ECE, LCA12, LCA16, LCE12, LCE16, LDA10, LDA12, LDA16, LDE10, LDE12, LDE16, RME, SDA, or SDE projector.

Fig. 6 shows a bolt base (see Fig. 14), consisting of a turret with $\frac{3}{4} \times 1\frac{1}{2}$ -inch cap screw for attaching floodlight to a pipe cap, structural steel, or any other convenient mounting place.

Fig. 7 shows a short pole bracket (see Fig. 15) which is 18 inches long. This bracket is made of bar iron $2\frac{1}{2}$ inches wide and $\frac{1}{4}$ -inch thick. The pole ends of the bracket and brace are drilled for use with $\frac{5}{8}$ -inch lag screws.

Fig. 8 shows a wheel base (see Fig. 16) with a pedestal of sufficient height to bring the center of the projector approximately $4\frac{1}{2}$ feet from the base. This can be supplied, at a slight increase in cost, with pedestal of any height desired. A base of this type is particularly suitable for a projector used in construction work.

Fig. 9 shows a projector which has a base designed for mounting on a standard wooden cross arm (see Fig. 17). The stud of the base is $1\frac{1}{4}$ inches in diameter and will, therefore, fit any standard insulator pin hole. This stud is $6\frac{1}{2}$ inches long and is threaded back 3 inches so that it may be fastened securely to any cross arm of standard dimensions, which are $3\frac{1}{2} \times 4\frac{1}{2}$ inches or 4×5 inches.

Fig. 10 shows a large wheel base (see Fig. 18), $17\frac{1}{2}$ inches in diameter. This base is used principally on portable projectors so that they cannot be tipped over when set on uneven surfaces.

Fig. 11 shows a bracket mounting arm (see Fig. 19) which can be used with type G-250, G-5, PS-2, PS-5, or RRU projector.

Fig. 12 shows a slip fitter base for 4-inch pipe (see Fig. 20).

Fig. 13 shows a slip fitter base for $2\frac{1}{2}$ -inch pipe (see Fig. 21). This base can only be used with types LCE20 and LCE24 floodlights with simple trunnion mounting.

SPECIAL BASES AND BRACKETS



Fig. 14
Bolt Base



Fig. 15
Short Pole Bracket



Fig. 16
Pedestal Base



Fig. 17
Cross Arm Base



Fig. 18
Wheel Base



Fig. 19
Bracket Mounting Arm



Fig. 20
4-Inch Slip Fitter Base



Fig. 21
2 1/2-Inch Slip Fitter Base

When any one of these special bases or brackets is ordered with a projector, the catalog number and list price of the particular base or bracket should be added to the catalog number and list price of the projector.

Description	Catalog Number	When Purchased with Projector in place of Regular Base, add	When Purchased Separately
		List Price, each	
Wheel Base	HL6816	\$1.90	\$ 5.00
Pedestal Base	HL6817	3.80	10.50
Cross Arm Base	HL6818	1.00	3.50
Short Pole Bracket	HL6820	8.50	9.50
Bolt Base	HL8666	No extra	2.50
Bracket Mounting Arm	HL8718	2.50	2.50
Slip Fitter Base, 4-inch	HL8766	4.20	8.40
Slip Fitter Base, 2 1/2-inch, for LCE20 and LCE24 only	HL9292	No extra	5.00

FOCUSING DIRECTIONS

Floodlights having comparatively narrow beams, such as the types DC, LCE, and LD, must have the light source located at the focal point of the reflector to produce an effective beam. These floodlights have focusing mechanisms which permit adjustment of the lamp filament to the focal point of the reflector.

To Focus: Throw the beam of light on a wall about 100 feet away. Adjust the lamp until the smallest spot is obtained. Or, throw the beam of light into the air. Adjust the lamp until the narrowest beam is obtained. Moving the lamp slightly back of the focal point will give a wider beam of light. The photographs show the results of different adjustments.

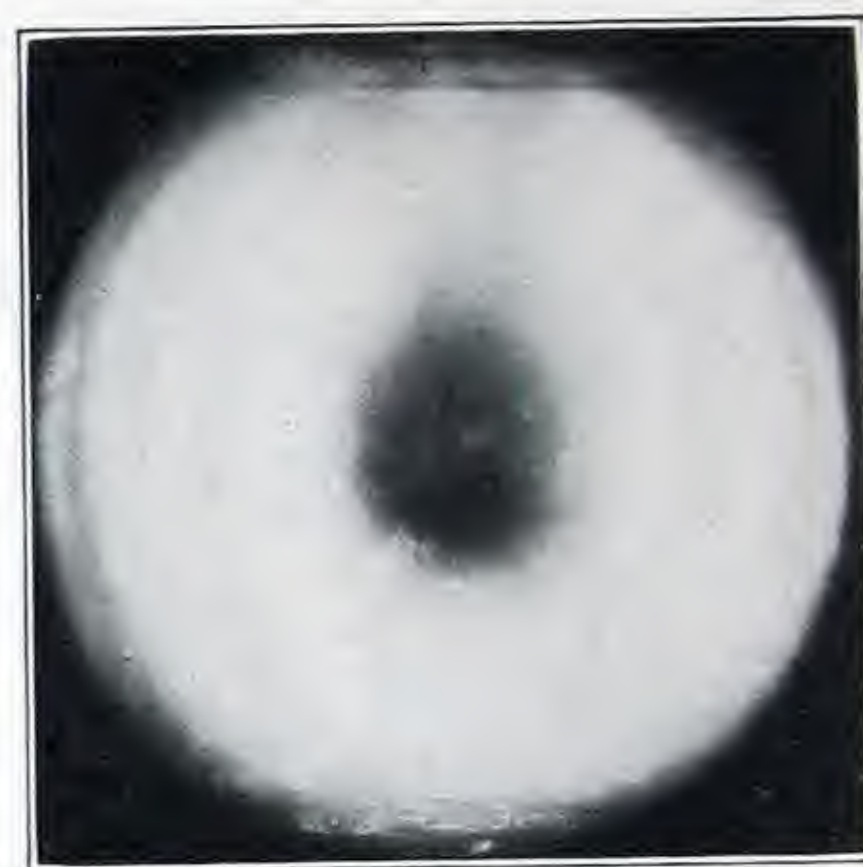
Spots of Light



Lamp Ahead of Focus



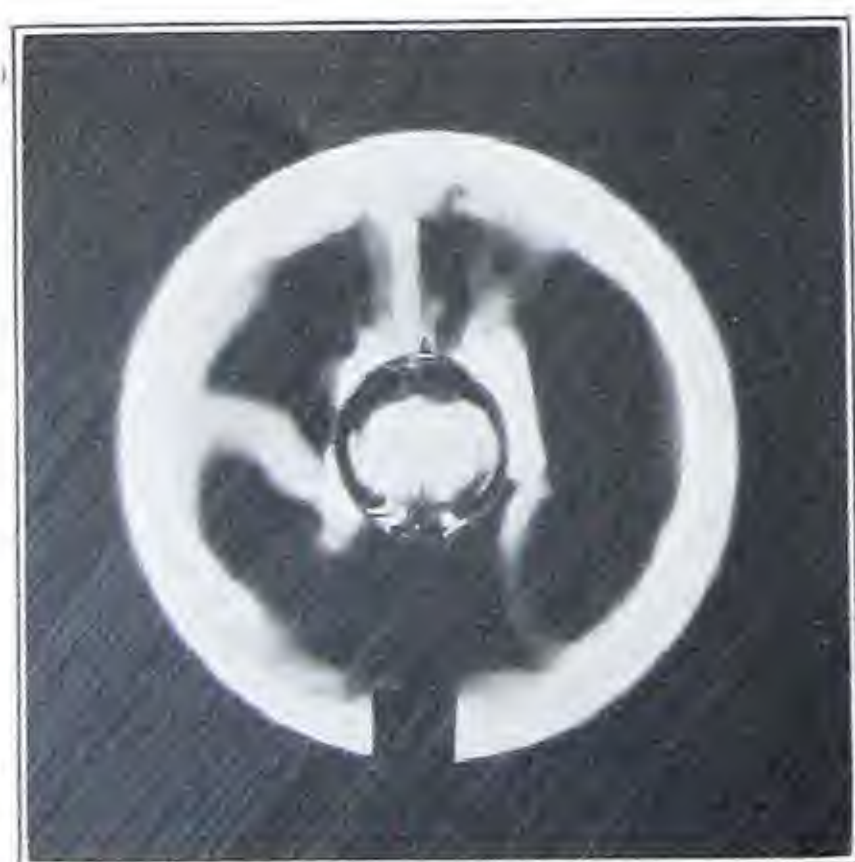
Lamp at Focus



Lamp Behind Focus

Above are shown photographs of the spots of light on a screen when the lamp is ahead of the focal point, at the focal point, and behind the focal point. It is quite obvious from these photographs that best results are obtained when the lamp is properly focused.

Illuminated Reflectors



Lamp Ahead of Focus



Lamp at Focus



Lamp Behind Focus

When the light source is properly located at the focal point of a parabolic reflector, the reflector is evenly illuminated over its entire surface, but when the light source is not at the focal point, the reflector is unevenly illuminated. The photographs above show the appearance of the reflector when the light source is located ahead of the focal point, at the focal point, and behind the focal point. Again, it is quite obvious that the light source should be properly focused.

FOCUSING DIRECTIONS

Perhaps the most striking way to tell when the light source is properly focused is to throw the beam of light up into the air and look at it from the side. When the light source is properly focused the beam of light is narrowest, which means maximum penetration. When the light source is ahead of the focal point the rays of light converge, then diverge, and the beam of light is shaped like an hour-glass. When the light source is behind the focal point the rays of light diverge and the beam of light is fan-shaped.



Lamp at Focus



Lamp Ahead of Focus



Lamp Behind Focus

INCANDESCENT LAMPS FOR FLOODLIGHT PROJECTORS

Lamp Bulbs



G Bulb



A Bulb



T Bulb



P Bulb



PS Bulb

The figures following the bulb type indicate the maximum diameter of the bulb in eighths of an inch. For example—a PS-40 bulb has a maximum diameter of $4\frac{0}{8}$ or 5 inches.



C5



C7



C7A

Lamp Filaments



C9



C13



C13A

Orders for incandescent lamps are not solicited, but for the convenience of customers, orders for lamps will be accepted, when such orders can be filled from stock. All lamps are shipped at purchaser's risk, and the purchaser must assume responsibility for defective lamps and for lamps broken in shipment.

Watts	Volts	Bulb	Base	Light Center Length	Life in Hours	Lumens	Fila-ment	Net Price	Lighting Service	Used with Types
1500	115	PS-52	Mogul	9 $\frac{1}{2}$ "	1000	33000	C7A	\$5.50	Gen.	LCE24
1500	115	G-40	Mogul	5 $\frac{3}{16}$ "	800	27750	C5	9.00	Fld.	DCE18, DCX18, LCE24
1500	32	G-40	Special	5 $\frac{1}{4}$ "	500	34500	C13	10.00	Air B.	DCE18, DCX18
1000	115	PS-52	Mogul	9 $\frac{1}{2}$ "	1000	21000	C7A	4.00	Gen.	BCA16, BCE16, LCE20, LCE24
1000	230	PS-52	Mogul	9 $\frac{1}{2}$ "	1000	18200	C7	4.75	H. V.	Ditto
1000	115	G-40	Mogul	5 $\frac{3}{16}$ "	800	18000	C5	6.75	Fld.	DCE18, DCX18, LCE20, LCE24
1000	115	T-20	Mogul	4 $\frac{3}{4}$ "	50	26800	C13A	6.50	Proj.	DCE18, DCX18
900	28-32	T-20	Mogul	4 $\frac{3}{4}$ "	100	23500	C13	6.75	Proj.	DCE18, DCX18
750	115	PS-52	Mogul	9 $\frac{1}{2}$ "	1000	14775	C7A	3.75	Gen.	BCA16, BCE16, LCE20, LCE24
750	230	PS-52	Mogul	9 $\frac{1}{2}$ "	1000	12900	C7	4.25	H. V.	Ditto
500	115	PS-40	Mogul	7"	1000	9500	C7A	2.00	Gen.	BCA16, BCE16, ECA16, ECE16, LCA16, LCE16, PS-5, RAS16, RLS16, RLU16
500	230	PS-40	Mogul	7"	1000	8050	C7A	2.40	H. V.	Ditto
500	115	G-40	Mogul	4 $\frac{1}{4}$ "	800	8200	C5	3.25	Fld.	FDV12, G-5, LCA16, LCE16, LDA16, LDE16, SDA16, SDE16
300	115	PS-35	Mogul	7"	1000	5280	C7A	1.25	Gen.	BCA16, BCE16, ECA16, ECE16, LCA16, LCE16, PS-5, RAS16, RLS16, RLU16
300	230	PS-35	Mogul	7"	1000	4290	C9	1.50	H. V.	Ditto
250	115	G-30	Medium	3"	800	3425	C5	1.75	Fld.	FDV12, G-250, LCA12, LCE12, LDA12, LDE12, SDA12, SDE12, SDX12, SDX16
250	115	G-30	Medium	3"	200	4175	C5	1.75	Spot.	Ditto
250	32	G-30	Medium	3"	500	4400	C5	1.75	L. H.	Ditto
200	115	PS-30	Medium	6"	1000	3240	C9	.80	Gen.	LCA12, LCE12, PS-2, RAS14, RLS12, RLU12, RM12, RME12, RMU12, RRU
200	230	PS-30	Medium	6"	1000	2680	C9	1.00	H. V.	Ditto
150	115	PS-25	Medium	5 $\frac{1}{4}$ "	1000	2310	C9	.60	Gen.	RAS12, RAS14, RLS12, RLU12, RM12, RME12, RMU12
150	115	P-25	Medium	3"	1000	1800	C5	1.70	H. L.	LDA10, LDE10, SDA10, SDE10
100	115	PS-25	Medium	5 $\frac{1}{4}$ "	1000	1350	C9	.50	Gen.	RAS12, RLS12, RLU12, RM12, RME12, RMU12
100	230	PS-25	Medium	5 $\frac{1}{4}$ "	1000	1060	C9	.60	H. V.	Ditto
100	115	A-23	Medium	4 $\frac{3}{8}$ "	1000	1320	C9	.40	Gen.	RAS12, RLS12, RLU12, RM10, RME10, RMU10
100	230	A-23	Medium	4 $\frac{3}{8}$ "	1000	1040	C9	.50	H. V.	Ditto
100	115	P-25	Medium	3"	200	1270	C5	1.00	Spot.	LDA10, LDE10, SDA10, SDE10
100	32	P-25	Medium	3"	500	1450	C5	1.00	L. H.	Ditto
94	115	P-25	Medium	2 $\frac{1}{16}$ "	1000	864	C5	1.15	S. R. H.	Ditto
75	115	PS-22	Medium	4 $\frac{3}{8}$ "	1000	930	C9	.45	Gen.	RAS12, RLS12, RLU12, RM10, RME10, RMU10
60	115	A-21	Medium	3 $\frac{3}{4}$ "	1000	666	C9	.25	Gen.	RM10, RME10, RMU10

H. V.=High Voltage. L. H.=Locomotive Headlight. S. R. H.=Street Railway Headlight. H. L.=Headlight. Prices are net with no cash discount, and are subject to change without notice. Air B.=Air Beacon.

FLOODLIGHT CALCULATIONS

When planning a floodlight installation, the first thing to determine is the intensity to which the area must be lighted. Light intensity is expressed in foot-candles. A foot-candle is the intensity obtained when one lumen of light falls on one square foot. The intensity required for lighting buildings, signs, or monuments depends on two things—(1) the color of the area to be lighted, and (2) the brightness of the surroundings. The object, to be attractive, must be bright enough to show a sharp contrast with its surroundings. Brightness depends on reflected light. A dark object is a poor reflector and must be lighted to many times the intensity necessary for a light colored object to show as effective a contrast. A sign whose letters and background are in contrasting colors can be lighted with a fraction of the light required if the letters and background are not in sharp contrast. If a sign or building is located in a downtown section of a city where the street lights are bright and there are many lighted signs, show windows, etc., it must be lighted to a much higher intensity than if it were located in a park or residential section where the surroundings are dark. In the brightly lighted districts the eyes of observers are accustomed to a high level of illumination and a sign must be brilliantly lighted if it is to attract attention.

The table below gives the intensities which have been found in practice to be required for various types of installations. Varying conditions may require higher or lower intensities than those shown.

Methods of calculating industrial interior lighting are described on pages 40 and 41.

Foot-Candle Intensities Under Average Conditions

Subject to be Illuminated	If Surroundings are Poorly Illuminated	If Surroundings are Well Illuminated
	Foot-Candles Intensity	Foot-Candles Intensity
Buildings and Monuments:		
White or Cream	2 to 5	5 to 12
Light Yellow or Buff	3 to 6	6 to 15
Medium Buff	6 to 12	10 to 20
Dark Surface	8 to 30	20 to 40
Billboards and Signs	3 to 15	10 to 40
Subject to be Illuminated		Foot-Candles Intensity
Bathing Beaches		0.25 to 2
Buildings:		
Construction		2. to 4
Excavation		0.5 to 2
Outdoor Athletics: Football, Baseball		2. to 6
Playgrounds		1. to 3
Yards of Mills, Factories, etc.25 to 1
Railroad Yards1 to .5
Automobile Parking Spaces25 to 1

Engineering Service

The Crouse-Hinds Company maintains a staff of competent illuminating engineers who specialize in floodlighting and industrial lighting problems. Many floodlighting and industrial lighting problems require the services of such engineers to plan an installation which will be effective and economical. The charts given on the following pages can be used to determine the approximate number of floodlights required and where time is limited, an estimate of the cost of the installation can be obtained with the help of these charts. A complete layout showing types of lenses, mounting positions, etc., can then be secured from Crouse-Hinds' Illumination Department.

Engineering recommendations for floodlighting will be given upon receipt of the following information:

1. Sketch or blueprint showing all principal dimensions and possible locations for floodlights.
2. Color and material of area to be lighted.
3. Nature of lighting in the immediate vicinity.

The sketches or blueprints should show both plan and elevation views, fully dimensioned. Photographs should also be sent if possible. In the case of buildings, the architects' elevation drawings of all sides and floor plans are required.

Requests for lighting of industrial interiors should include the following information:

1. Plan and elevation views of areas to be lighted, showing nature of work performed in each area.
2. Color of walls.
3. Percentage of wall space occupied by windows.
4. Show work benches which are next to walls.
5. Show height of any travelling cranes.

FLOODLIGHT CALCULATIONS

The three charts on the following pages provide a quick and convenient method for calculating the approximate number of floodlights required to light a given area, and also the area that will be covered by each floodlight. To use the charts, first determine from the table on page 35 the required intensity in foot-candles. Then calculate the number of square feet in the area to be lighted. If the area is less than 20,000 square feet, and the intensity greater than $\frac{1}{4}$ foot-candle, use chart No. 2 on page 38. If the area is greater than 20,000 square feet and the intensity below 5 foot-candles, use Chart No. 3 on page 39. Referring to either Chart 2 or 3, place a straight edge across lines A and D, connecting the area involved on A with the required intensity on line D. Mark the corresponding reference point on line B. Now lay the straight edge across lines B, C, and E, connecting reference mark on B with LCE24 mark on C. Read on line E the number of LCE24 floodlights required. Then lay straight edge successively across reference mark, and LCE12, LCE16, and LCE20. This will give the number of each size of floodlights that would be required to give the desired intensity. This takes no account of whether the floodlights selected will cover the area, and has no relation to the distance from the floodlight to the area. It simply assumes that all the light from the floodlights will fall on the area.

Turn to Chart No. 1, page 37. The most economical installation calls for the use of the largest floodlights that will cover the area evenly. The beam spreads in degrees of the different floodlights with different lenses and lamps are given below. Select the beam spread of the unit it is desired to use. Referring to Chart No. 1, lay a straight edge connecting the degrees of spread on line A to the distance from the floodlight to the area lighted on line C. On line B read the diameter of the light spot and the area covered in square feet. Each area should, if possible, be lighted by more than one floodlight, and the beams should overlap so that each portion receives light from more than one floodlight. A spread lens produces an elliptical beam, and the spread in each direction is given in the table. In checking the area covered with a spread lens, the spread in each direction must be determined separately from Chart No. 1, page 37.

Chart No. 1 does not apply if the beam strikes the area at a sharp angle. It is approximately correct if the beam strikes the area within 20 degrees of perpendicular.

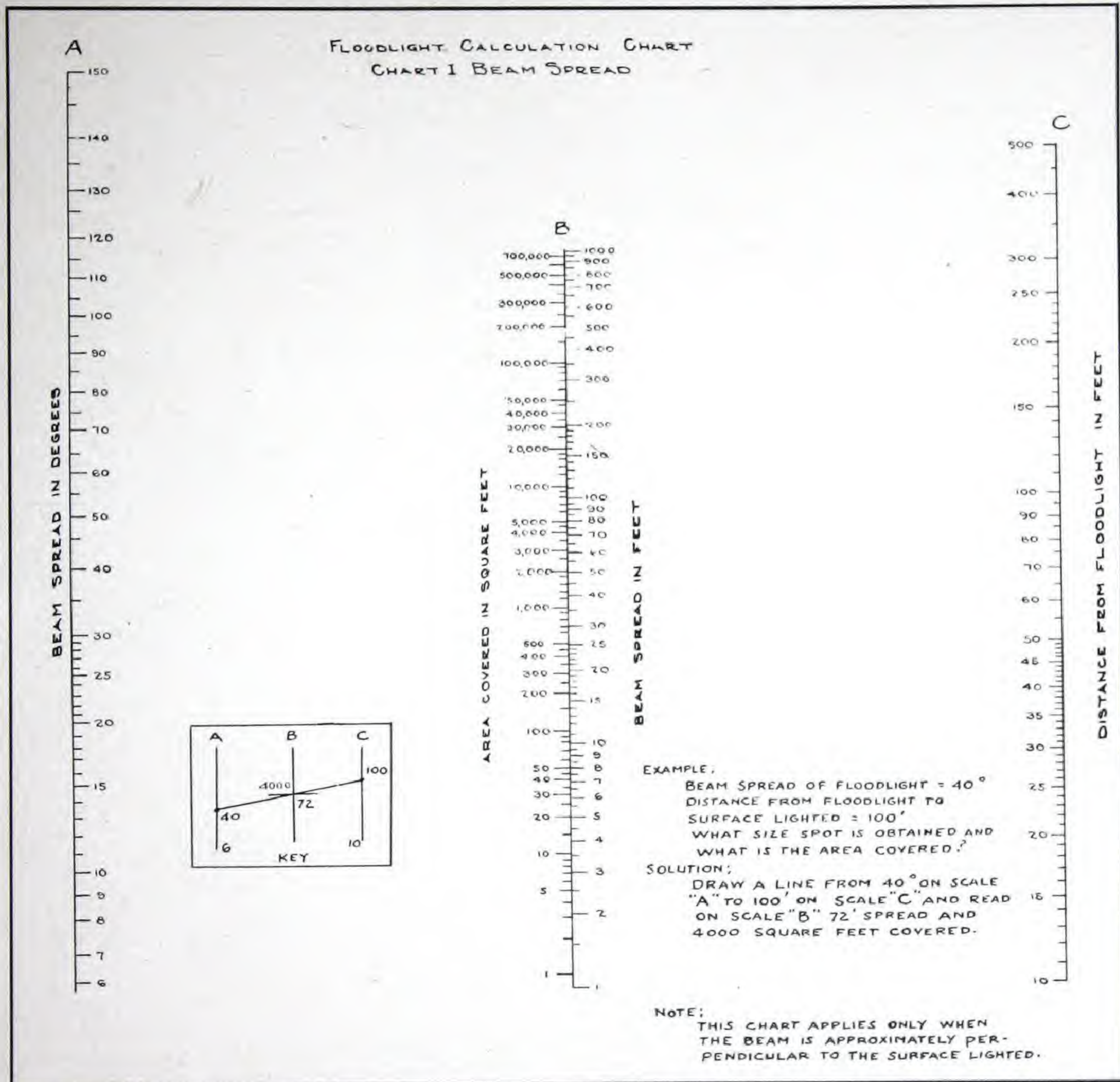
For estimating purposes, the approximate number of floodlights required can be determined from Chart 2 or 3. This will give an idea of the cost of the job and the question of whether to use, for instance, 500 or 1000-watt units, what lenses to use, and how and where to mount the floodlights can be decided later by Crouse-Hinds' Illumination Department who will gladly assist customers in determining the most efficient and economical installation.

Floodlight Illumination Data

Type	Reflector	Lens	Lamp		Beam Lumens	Beam Spread	
			Watts	Bulb		In Focus	Out of Focus
LCE24	Hammered	Clear	1500	PS-52	14520	24°	40°
LCE24	Smooth	Clear	1500	PS-52	14850	22°	35°
LCE24	Smooth	Diffusing	1500	PS-52	16500	90°	
LCE24	Smooth	Spread	1500	PS-52	14200	19° x 45°	
LCE24	Smooth	Clear	1500	G-40	11400	10° 30'	
LCE20	Hammered	Clear	1000	PS-52	8620	33°	59°
LCE20	Smooth	Clear	1000	PS-52	8620	24°	40°
LCE20	Smooth	Diffusing	1000	PS-52	7254	37°	
LCE20	Smooth	Spread	1000	PS-52	7780	20° x 42°	
LCE16	Hammered	Clear	500	PS-40	3800	32°	45°
LCE16	Smooth	Clear	500	G-40	3100	13°	
LCE16	Smooth	Diffusing	500	PS-40	3757	72°	
LCE16	Smooth	Spread	500	PS-40	3800	22° x 51°	
LCE12	Hammered	Clear	200	PS-30	1565	46°	60°
LCE12	Smooth	Clear	250	G-30	1300	20°	
LCE12	Smooth	Diffusing	200	PS-30	1400	44°	
LCE12	Smooth	Spread	200	PS-30	1400	26° x 51°	
LDE16	Smooth	Clear	500	G-40	2030	9°	17°
LDE16	Smooth	Spread	500	G-40	1960	9° x 46°	
LDE12	Smooth	Clear	250	G-30	1355	14°	18°
LDE12	Smooth	Spread	250	G-30	1290	14° x 48°	
SDE16	Smooth	Clear	500	G-40	2030	9°	17°
SDE16	Smooth	Spread	500	G-40	1960	9° x 46°	
SDE12	Smooth	Clear	250	G-30	1355	14°	18°
SDE12	Smooth	Spread	250	G-30	1290	14° x 48°	
PS-5	Hammered	Clear	500	PS-40	3937	36°	45°
G-5	Smooth	Clear	500	G-40	2680	17°	28°
PS-2	Hammered	Clear	200	PS-30	1555	43°	60°
G-250	Smooth	Clear	250	G-30	1302	23°	30°
RRU	Smooth	Clear	200	PS-30	1326	36°	
RRU	Hammered	Clear	200	PS-30	1165	77°	
BCA	Diffusing	Clear	1000	PS-52	12018	136°	
ECA	Diffusing	Clear	500	PS-40	4800	136°	
RM	Enameled	Clear	200	PS-30	1368	132°	
RM	Enameled	Diffusing	200	PS-30	1216	142°	

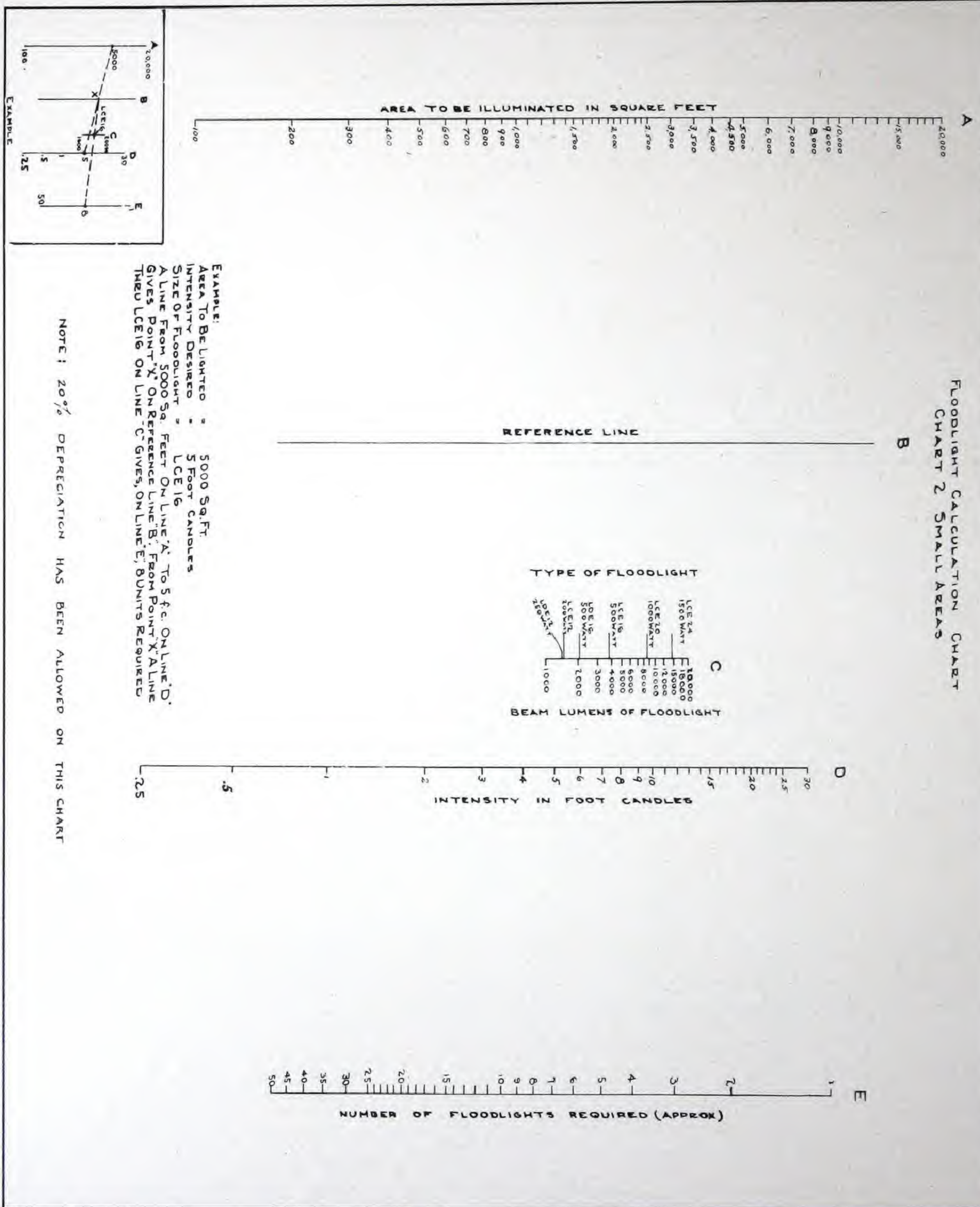
Note: Any beam spread from the "In Focus" value to the "Out of Focus" position can be obtained by adjusting the lamp position. For wide spreads, a more even distribution is obtained with a spread or diffusing lens. Values given are for 115-volt lamps. If lamps other than those shown are used, the distribution will be changed.

FLOODLIGHT CALCULATIONS



Note: For industrial interior lighting calculation data, see pages 40 and 41.

FLOODLIGHT CALCULATIONS

FLOODLIGHT CALCULATION CHART
CHART 2 SMALL AREAS

INTERIOR LIGHTING CALCULATIONS

The charts on the opposite page offer a short cut method of calculating interior lighting, using either type RAS, RLS, or RLU lighting units. The results obtained are approximate but are close enough for most cases. Where greater accuracy is desired or special conditions exist, Crouse-Hinds' Illumination Department will furnish estimates for any type of industrial lighting. The table below gives the present standards of intensity for various industries. Where a range of intensity is shown, it is understood that the low value is for the coarser operations which require less light, and the high value for finer operations which require a high intensity.

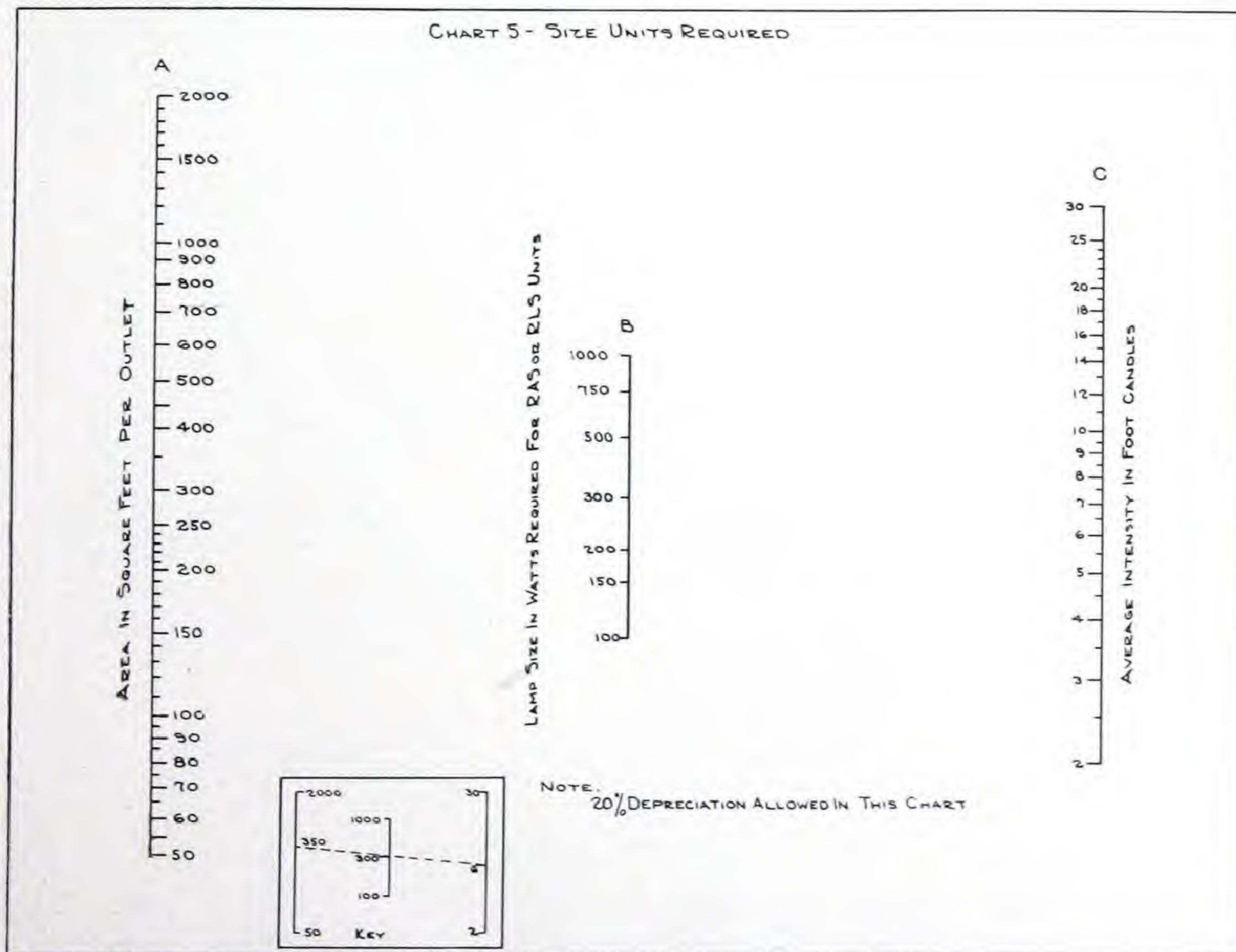
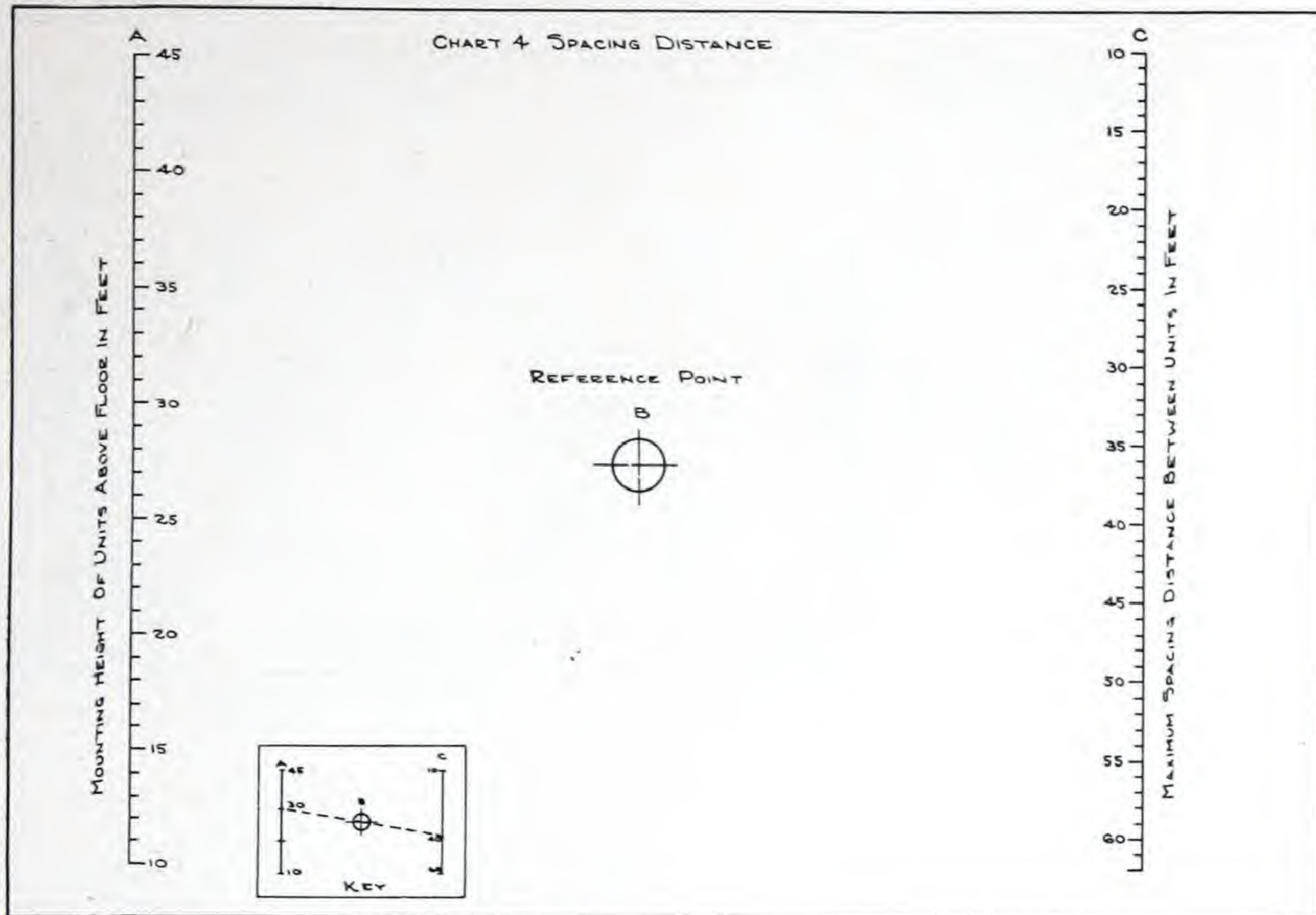
After selecting the intensity, refer to Chart 4. Lay a straight edge across the chart connecting the mounting height on line (A) with reference point (B). Where this line crosses line (C) will be found the maximum spacing between units for uniform illumination. This spacing can be made less, if required, to fit the spacing of the bays. This determines the number of units required. The size of unit and lamp required is determined from Chart 5. The spacing between units gives the area covered by each lamp. Lay a straight edge across Chart 5 connecting the area per unit on line (A) with the required intensity on line (C). Read on line (B) the size lamp required. If the line falls between two sizes, as a rule select the nearest one. If daylight lamps are used, choose a lamp one-third larger.

Example:

A room 100 feet by 60 feet is to be lighted to 10 foot-candles intensity. The mounting height of units above floor is 16 feet. From Chart 4 connecting 16 on line (A) with reference point (B), the line intercepts line (C) at 20 feet. This means that the units must be 20 feet apart or closer. 100 divided by 20 gives 5 units—the length of the room, and 60 divided by 20 gives 3 rows of units. This is a total of 15 units. Each unit would cover a square 20 feet wide, which has an area of 20 x 20 or 400 square feet. Referring to Chart 5, a line through 400 on line (A) and 10 foot-candles on line (C) falls near 500 watts on line (B), so 500-watt lamps are chosen. This would mean using 15 type RAS16 units with 500-watt lamps spaced on 20 foot centers.

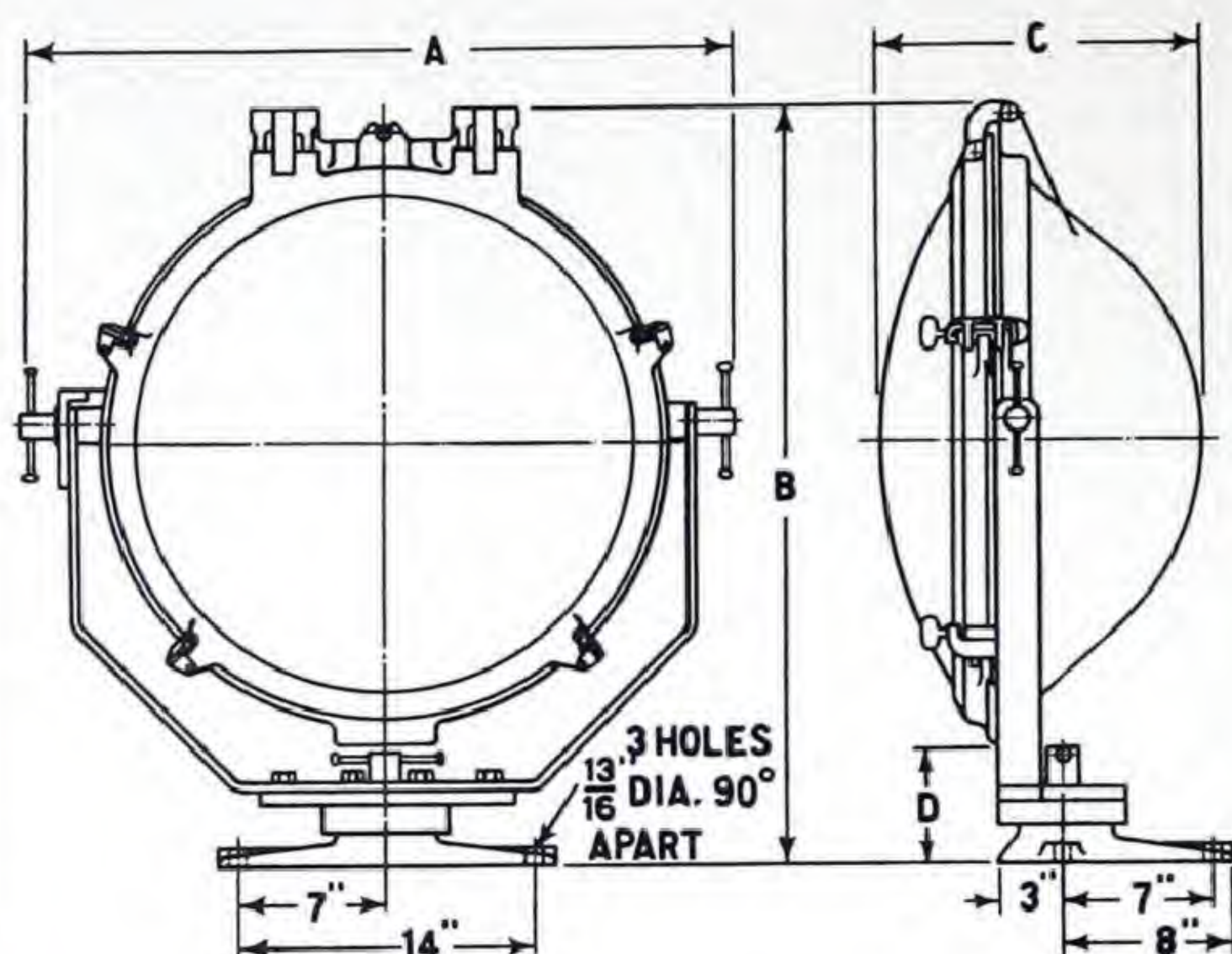
Industry	Foot-Candles	Industry	Foot-Candles
Assembling		Milling	
Rough	3 to 6	Cleaning, Grinding, and Rolling	5
Medium	5 to 10	Flour Grading	15
Fine	8 to 50	Paint Shops	
Boiler Rooms	2 to 4	Dipping, Spraying, and Firing	5
Chemical Works	3 to 8	Hand Painting and Finishing	10 to 20
Coal Breaking, Washing, and Screening	3	Plating	5
Forge Shops and Welding		Polishing and Burnishing	8
Rough Forging	6	Receiving and Shipping	4
Fine Forging and Welding	10	Steel and Iron Mills	
Foundries		Soaking Pits and Reheating Furnaces	2
Charging Floor, Tumbling, Cleaning	5	Charging and Casting Floors	4
Rough Molding and Core Making	6	Inspection	15
Fine Molding and Core Making	10	Stone Crushing and Screening	
Inspecting		Breaker Room	3
Rough	6	Screen Rooms	5
Medium	10	Store and Stock Rooms	2 to 6
Fine	15 to 50	Structural Steel Fabrication	6
Leather Manufacturing		Textile Mills	
Vats	3	Cotton	5 to 10
Cleaning, Tanning, and Stretching	4	Silk	8 to 15
Cutting and Stuffing	6	Woolen	4 to 15
Finishing and Scarfing	10	Warehouse	2
Machine Shops		Woodworking	5 to 10
Rough Machine Work	6		
Medium Machine Work, Rough Grinding, Buffing, and Polishing	10		
Fine Machine Work, Grinding, Buffing, and Polishing	12		
Extra Fine Work	12 to 50		

INTERIOR LIGHTING CALCULATIONS



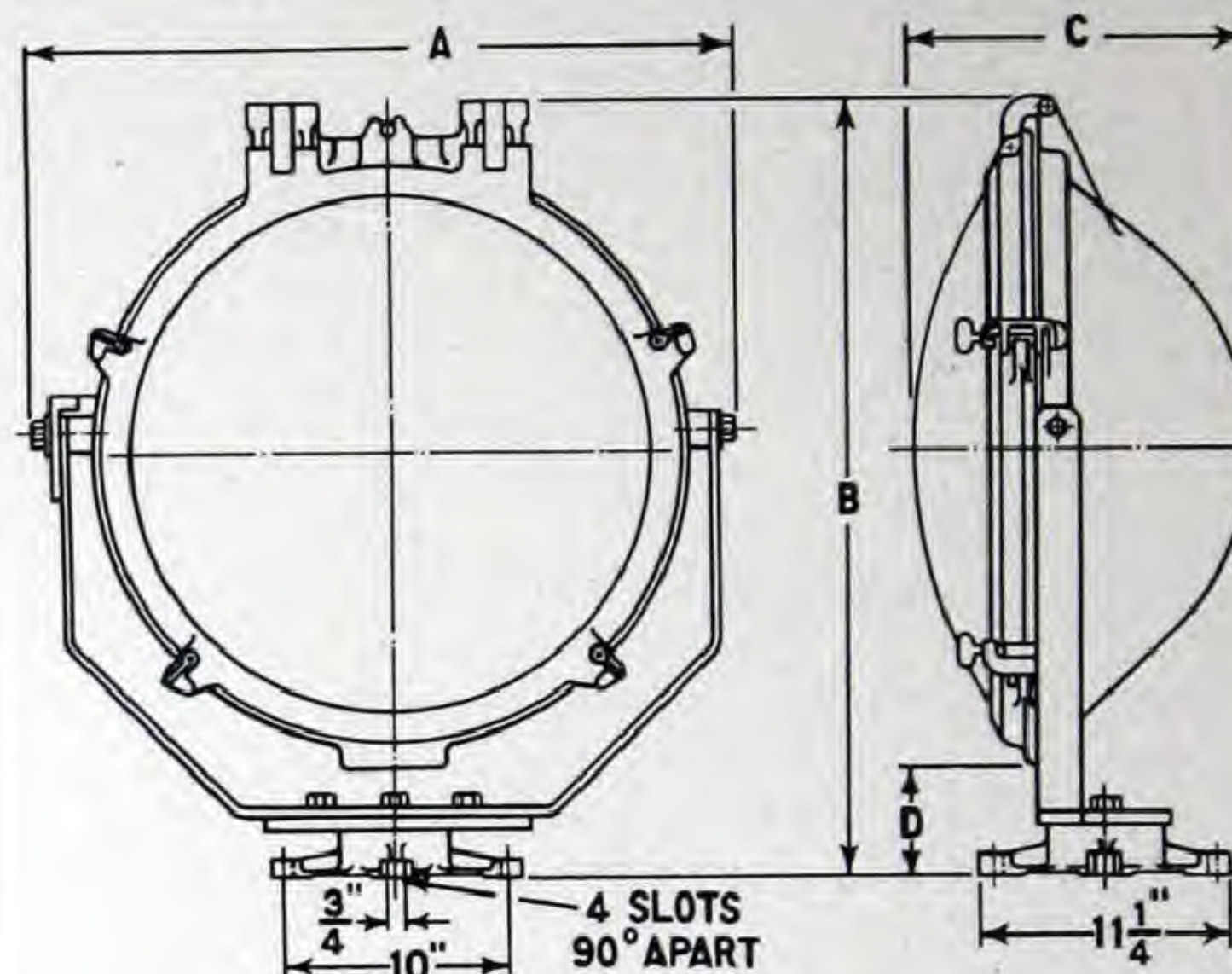
FLOODLIGHT PROJECTORS

Dimensions

Types LCE20 and LCE24
Standard Mounting

Dimensions in Inches

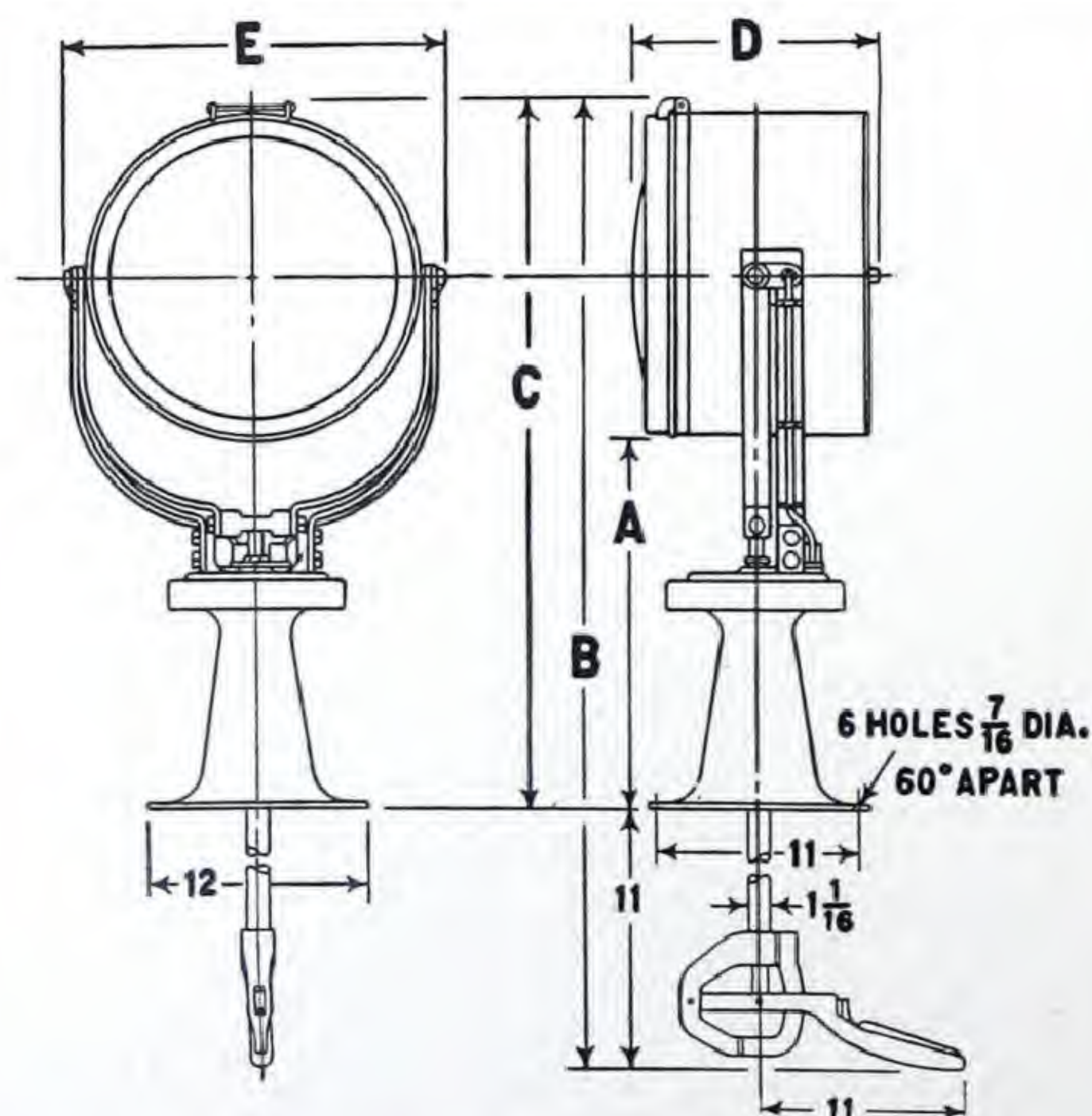
Type	A	B	C	D
LCE20	28 $\frac{1}{4}$	33	13 $\frac{1}{4}$	8 $\frac{1}{4}$
LCE24	33	35	15 $\frac{1}{2}$	5 $\frac{1}{2}$

Types LCE20 and LCE24
Simple Trunnion Mounting

Dimensions in Inches

Type	A	B	C	D
LCE20	26	32	13 $\frac{1}{4}$	7 $\frac{1}{4}$
LCE24	31	34	15 $\frac{1}{2}$	4 $\frac{1}{2}$

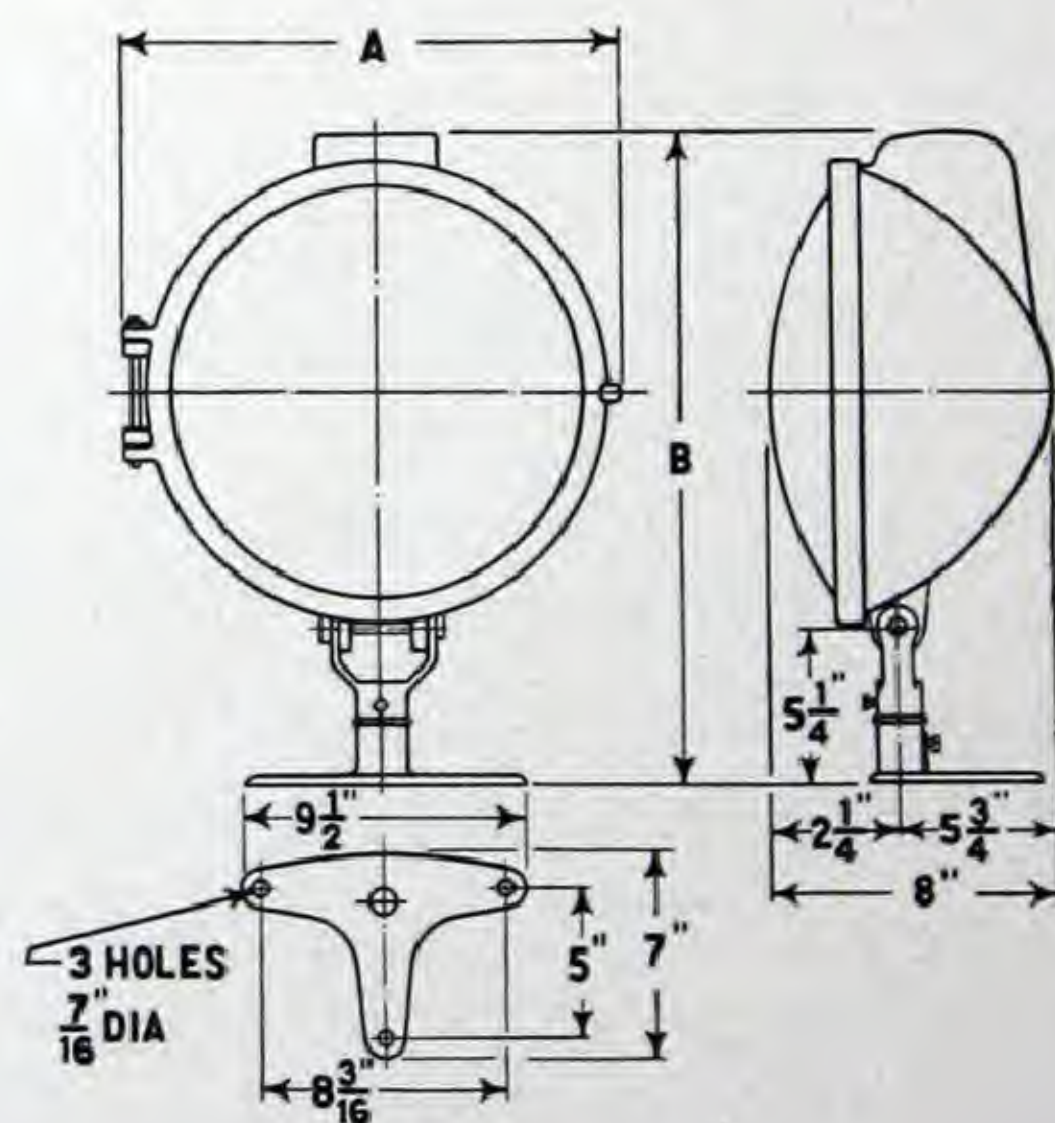
Types DCX and SDX



Dimensions in Inches

Type	A	B	C	D	E
DCX18	17	48	37	28	25
SDX12	18 $\frac{3}{8}$	44 $\frac{9}{16}$	32 $\frac{9}{16}$	9 $\frac{1}{8}$	15
SDX16	18	47 $\frac{3}{4}$	36 $\frac{3}{4}$	12 $\frac{1}{2}$	20 $\frac{3}{4}$

Types G-250, G-5, PS-2, PS-5, and RRU



Dimensions in Inches

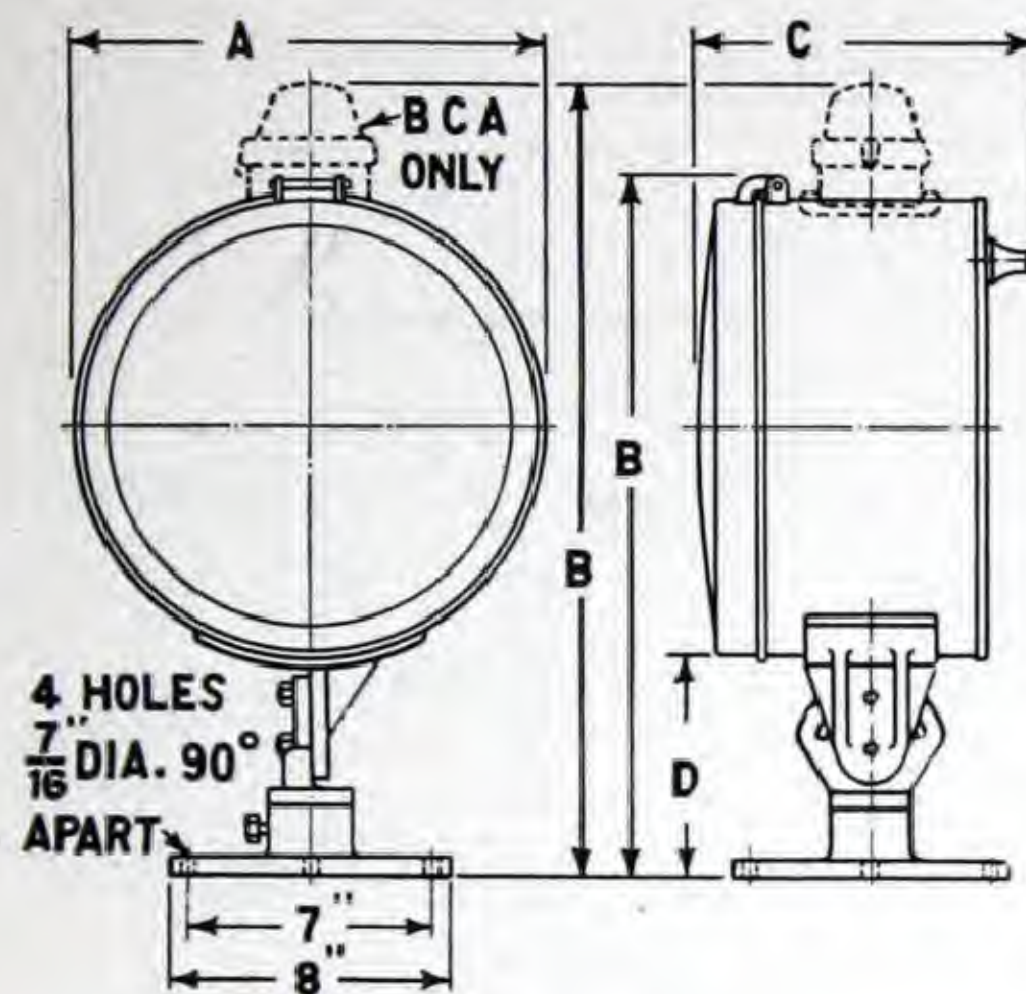
Type	A	B
G-250	14	19 $\frac{1}{4}$
G-5	16 $\frac{1}{2}$	21 $\frac{3}{4}$
PS-2	14	19 $\frac{1}{4}$
PS-5	16 $\frac{1}{2}$	21 $\frac{3}{4}$
RRU	12 $\frac{3}{4}$	20

FLOODLIGHT PROJECTORS

Dimensions

Floodlight Projectors with Quadrant Mounting

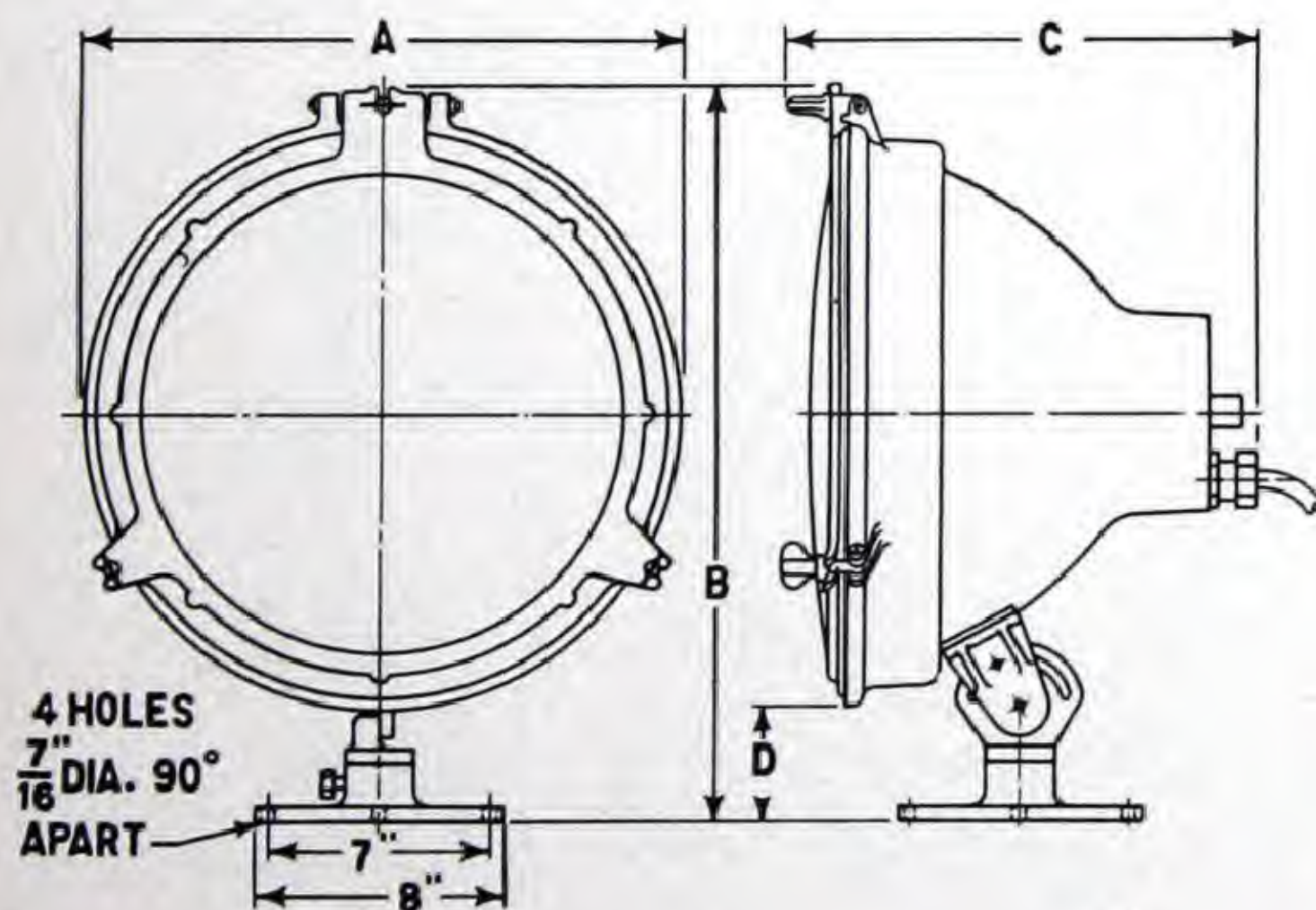
Types BCA, ECA, and SDA



Dimensions in Inches

Type	A	B	C	D
BCA16	18	31 1/8	10 7/8	6 3/8
ECA16	18	25	11 1/4	6 3/8
SDA10	11 1/4	18 1/4	8 3/4	6 3/8
SDA12	13 5/8	20 3/4	9 1/4	6 3/8
SDA16	18	25	12 1/8	6 3/8

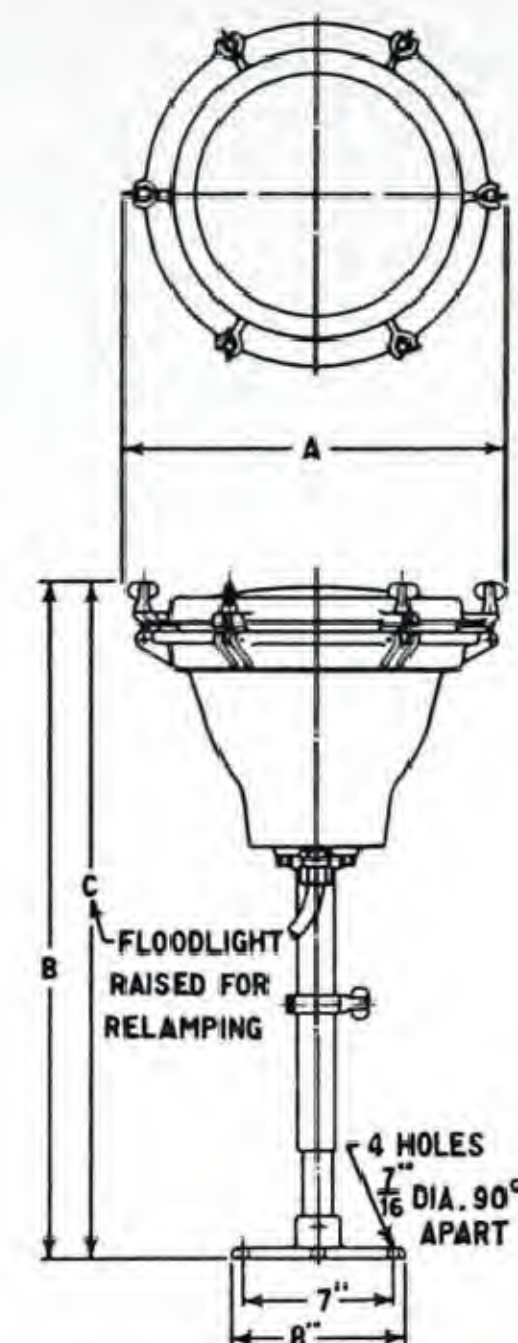
Type LDA



Dimensions in Inches

Type	A	B	C	D
LDA10	13	18 1/2	8 3/8	4 1/2
LDA12	15 3/8	20 1/2	13 3/4	4 1/4
LDA16	19 3/8	23 1/8	15 1/2	3 3/4

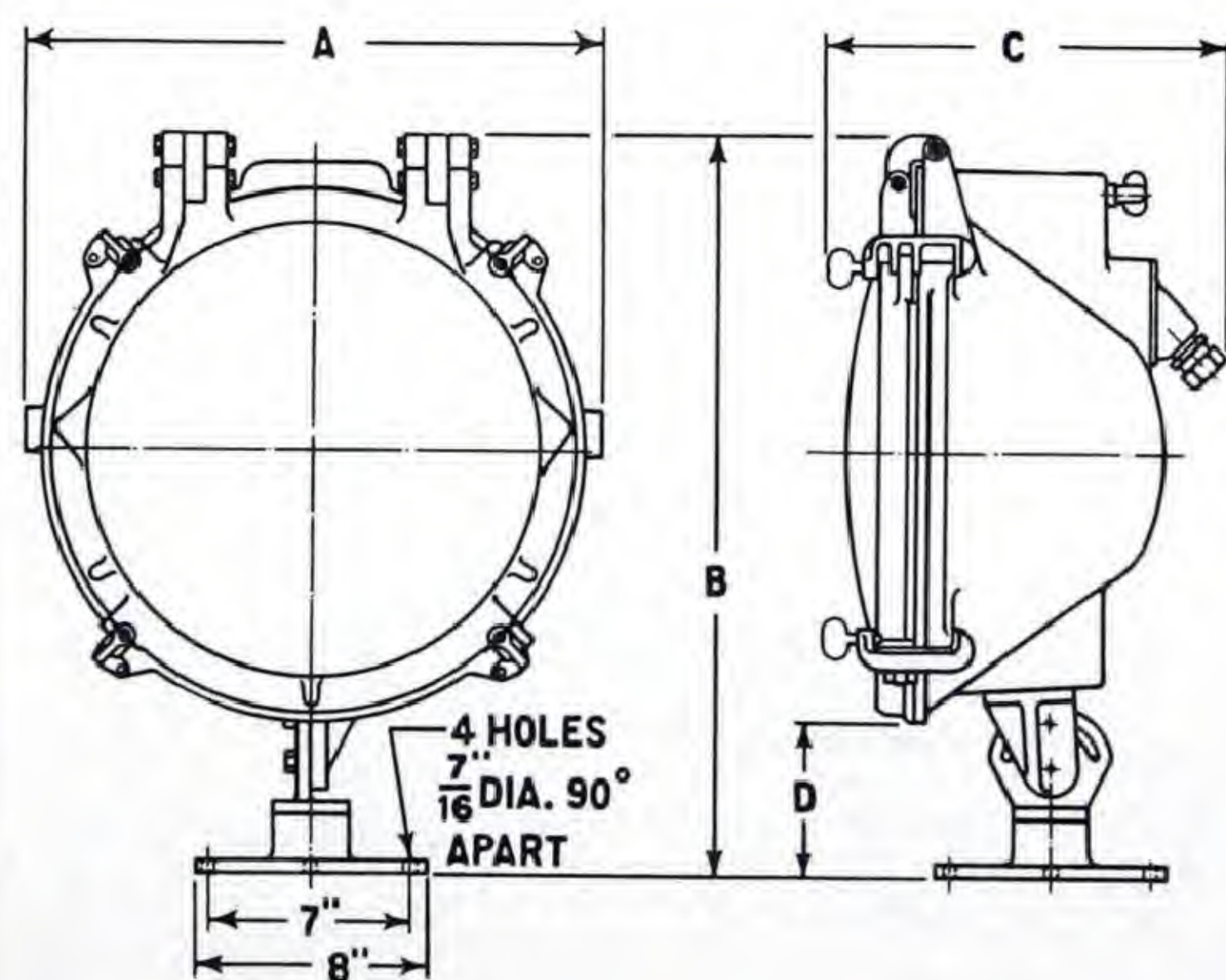
Type FDV



Dimensions in Inches

Type	A	B	C
FDV12	17 3/4	31	37

Type LCA



Dimensions in Inches

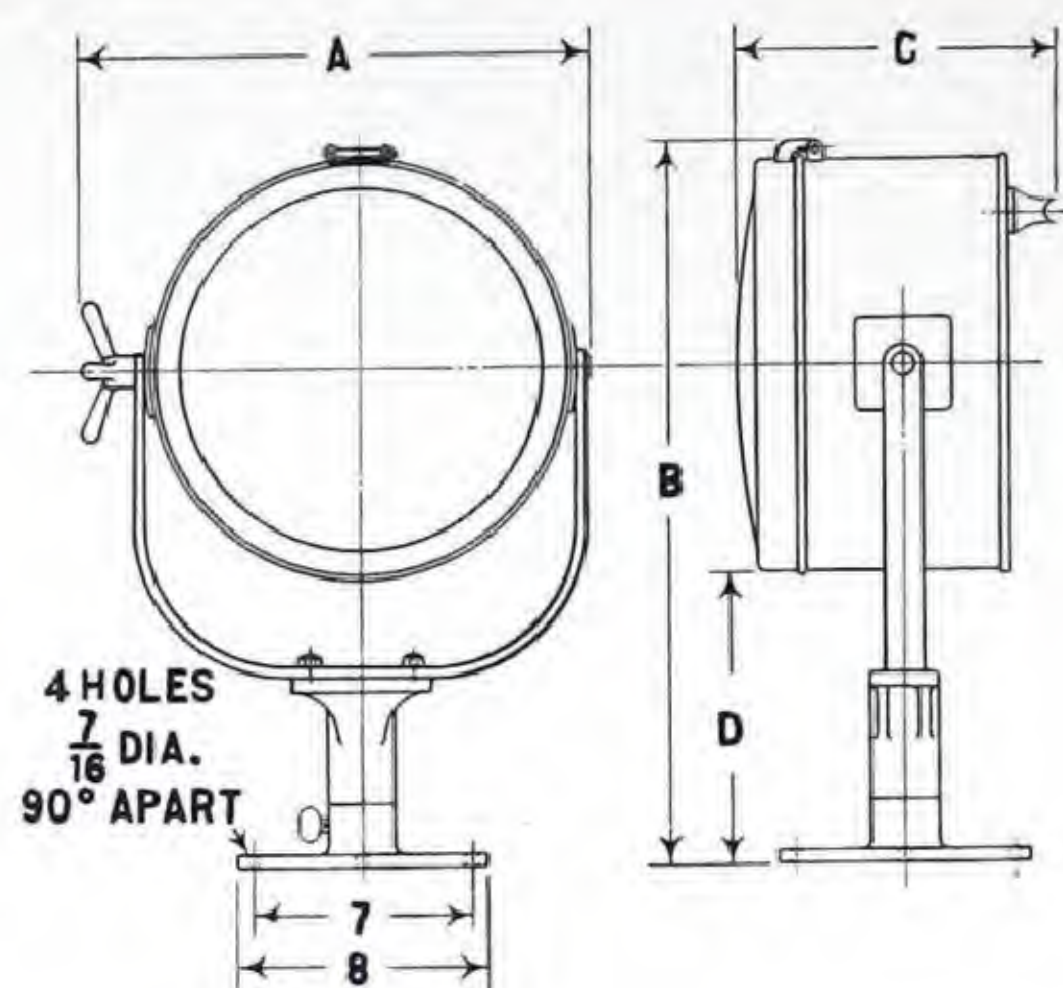
Type	A	B	C	D
LCA12	15 1/2	22	8 3/4	4 1/2
LCA16	19 3/4	25 1/2	14	5 1/4

FLOODLIGHT PROJECTORS

Dimensions

Floodlight Projectors with Trunnion Mounting

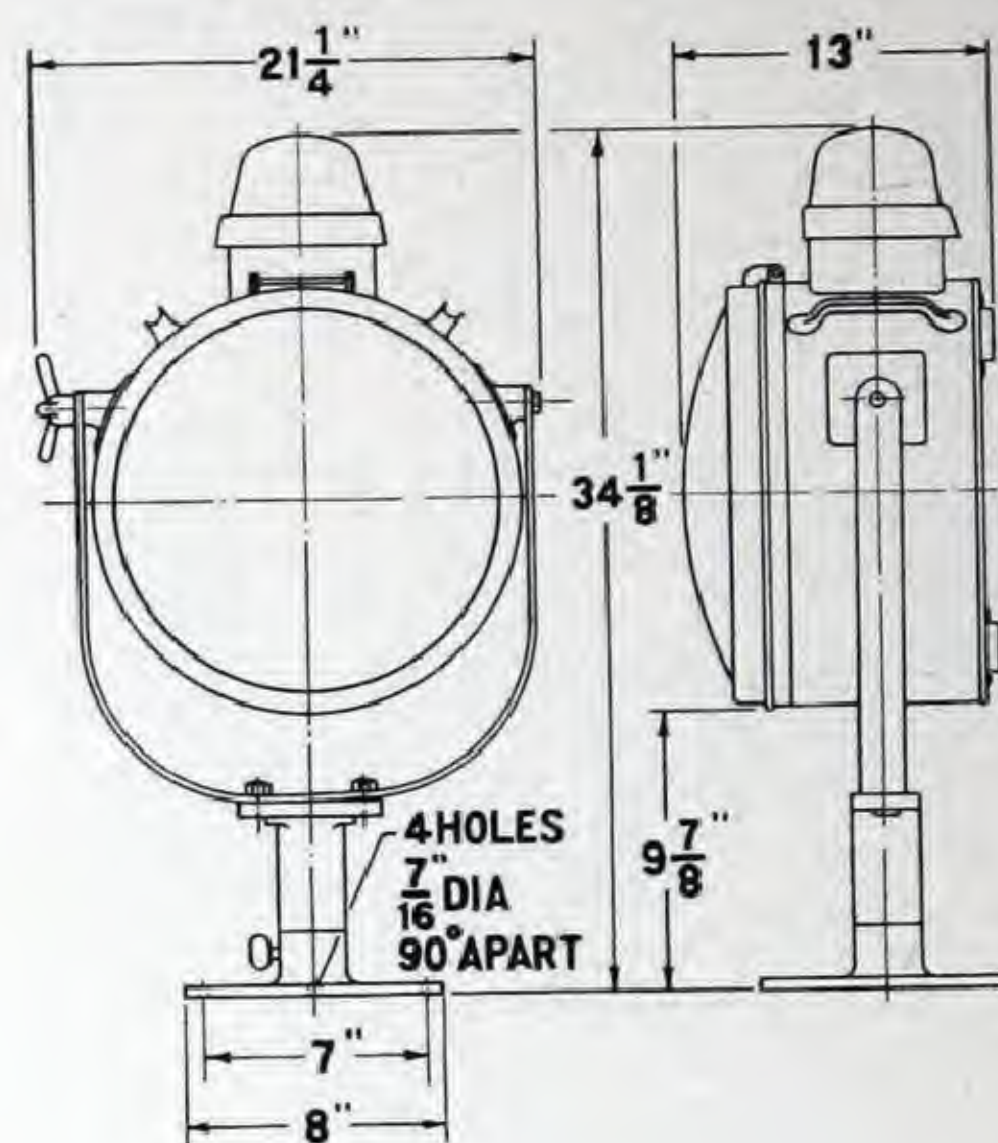
Types DCE, ECE, RME, and SDE



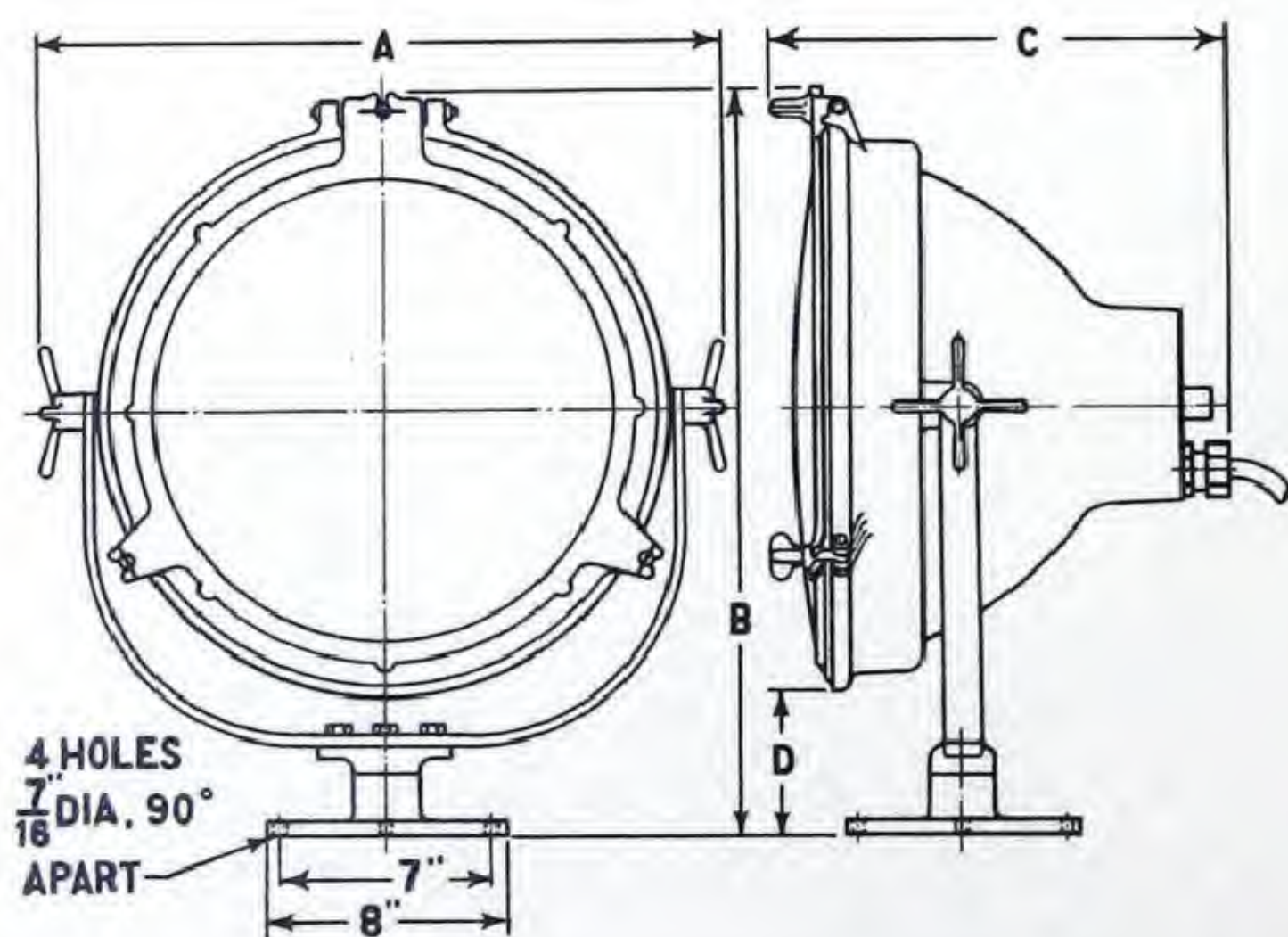
Dimensions in Inches

Type	A	B	C	D
DCE18	25	31	28	7 $\frac{1}{4}$
ECE16	21 $\frac{1}{4}$	25 $\frac{7}{8}$	11 $\frac{1}{4}$	7 $\frac{1}{4}$
RME10	14	20 $\frac{1}{4}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$
RME12	16 $\frac{3}{4}$	22 $\frac{3}{4}$	6 $\frac{5}{16}$	5 $\frac{1}{4}$
SDE10	14 $\frac{7}{8}$	15 $\frac{5}{8}$	8 $\frac{3}{4}$	7 $\frac{1}{4}$
SDE12	17	21 $\frac{5}{8}$	9 $\frac{1}{4}$	7 $\frac{1}{4}$
SDE16	21 $\frac{1}{4}$	25 $\frac{7}{8}$	12 $\frac{1}{8}$	7 $\frac{1}{4}$

Type BCE



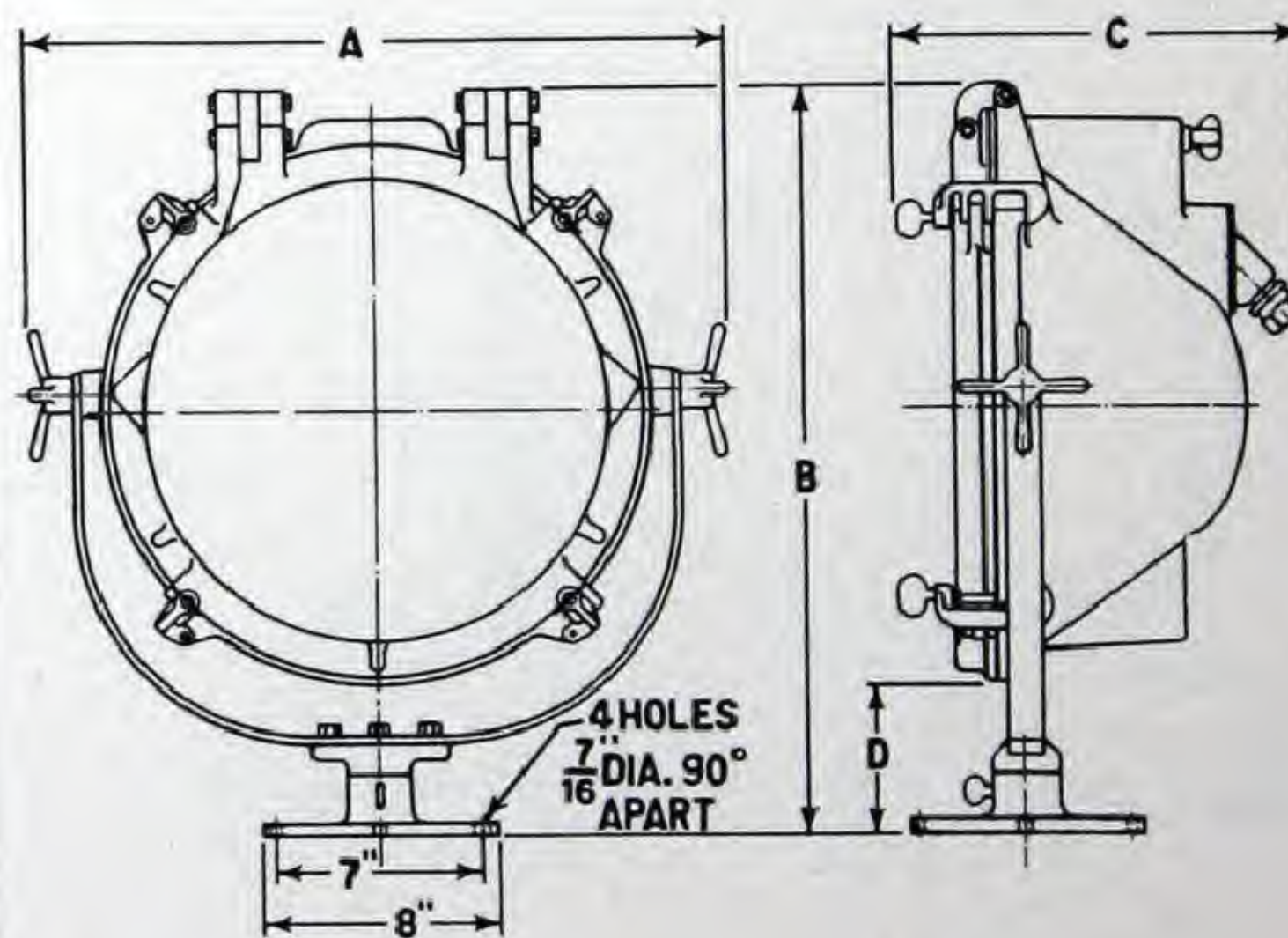
Type LDE



Dimensions in Inches

Type	A	B	C	D
LDE10	15 $\frac{3}{4}$	19	8 $\frac{3}{8}$	4 $\frac{3}{4}$
LDE12	19 $\frac{3}{8}$	21 $\frac{1}{4}$	13 $\frac{3}{4}$	5
LDE16	23 $\frac{3}{4}$	24 $\frac{3}{4}$	15 $\frac{1}{2}$	4 $\frac{1}{2}$

Types LCE12 and LCE16



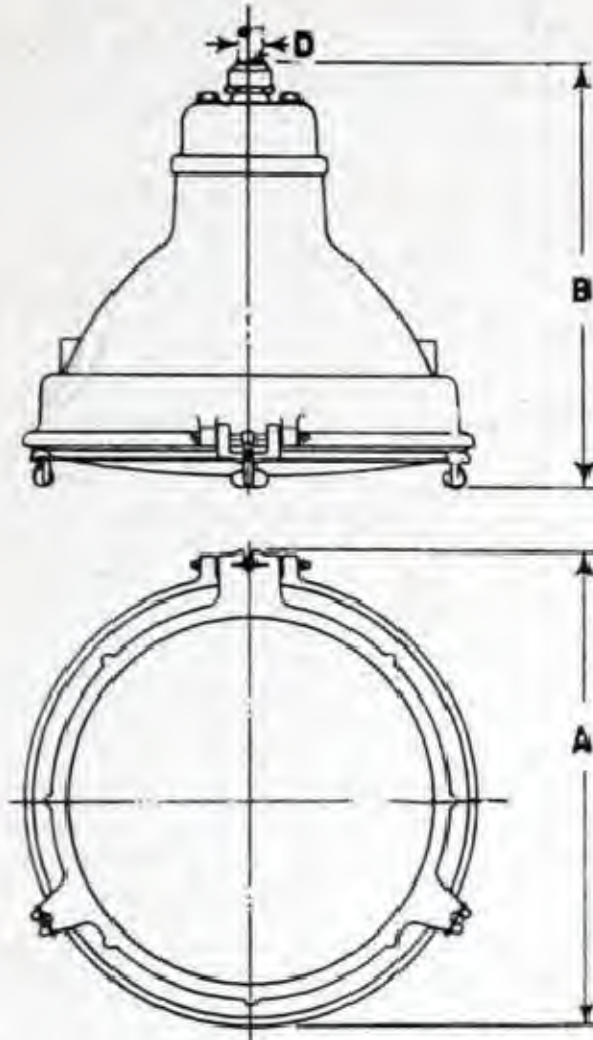
Dimensions in Inches

Type	A	B	C	D
LCE12	19 $\frac{1}{2}$	22 $\frac{1}{4}$	8 $\frac{3}{4}$	4 $\frac{3}{4}$
LCE16	23 $\frac{3}{4}$	25 $\frac{1}{2}$	14	5

INDUSTRIAL LIGHTING UNITS

Dimensions

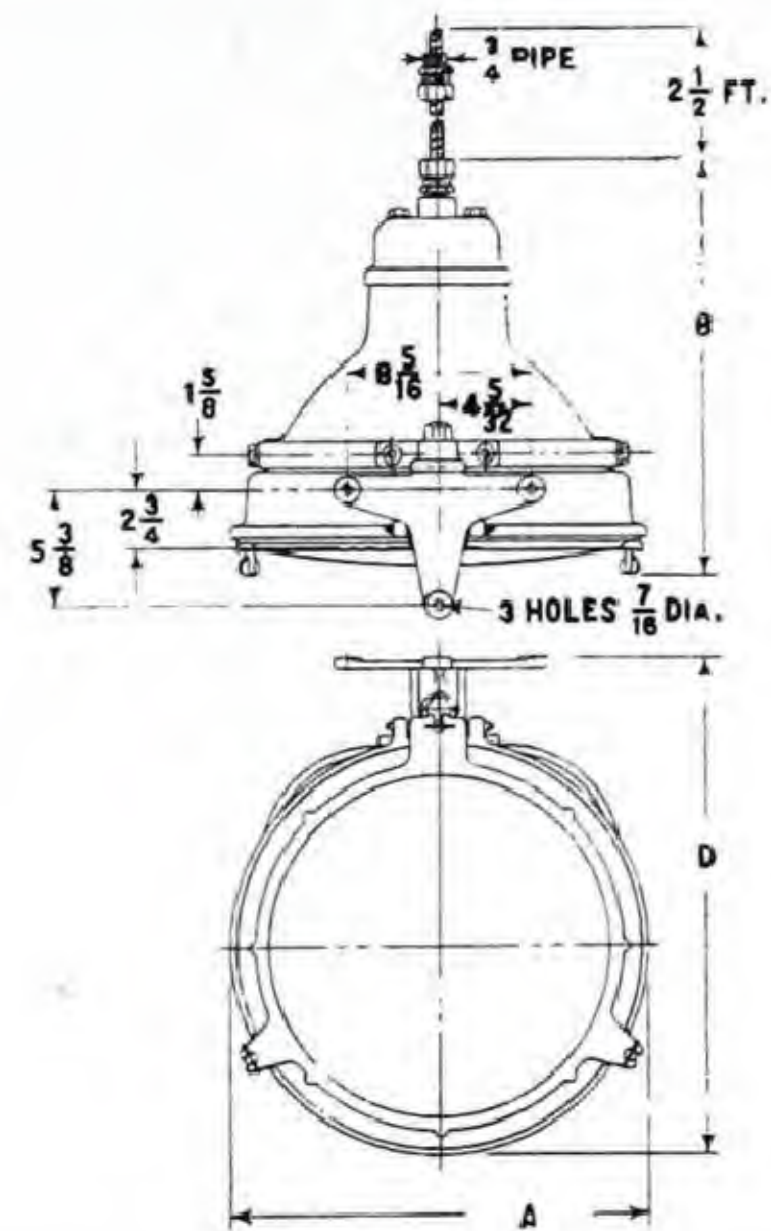
Types RAS and RLS



Dimensions in Inches

Type	A	B	D
RAS12	15 $\frac{1}{4}$	11	$\frac{1}{2}$
RAS14	18 $\frac{3}{4}$	15 $\frac{1}{2}$	$\frac{3}{4}$
RAS16	20 $\frac{1}{4}$	15	$\frac{3}{4}$
RLS12	15 $\frac{3}{8}$	16 $\frac{1}{2}$	$\frac{3}{4}$
RLS16	19 $\frac{3}{8}$	18 $\frac{1}{4}$	$\frac{3}{4}$

Type RLU



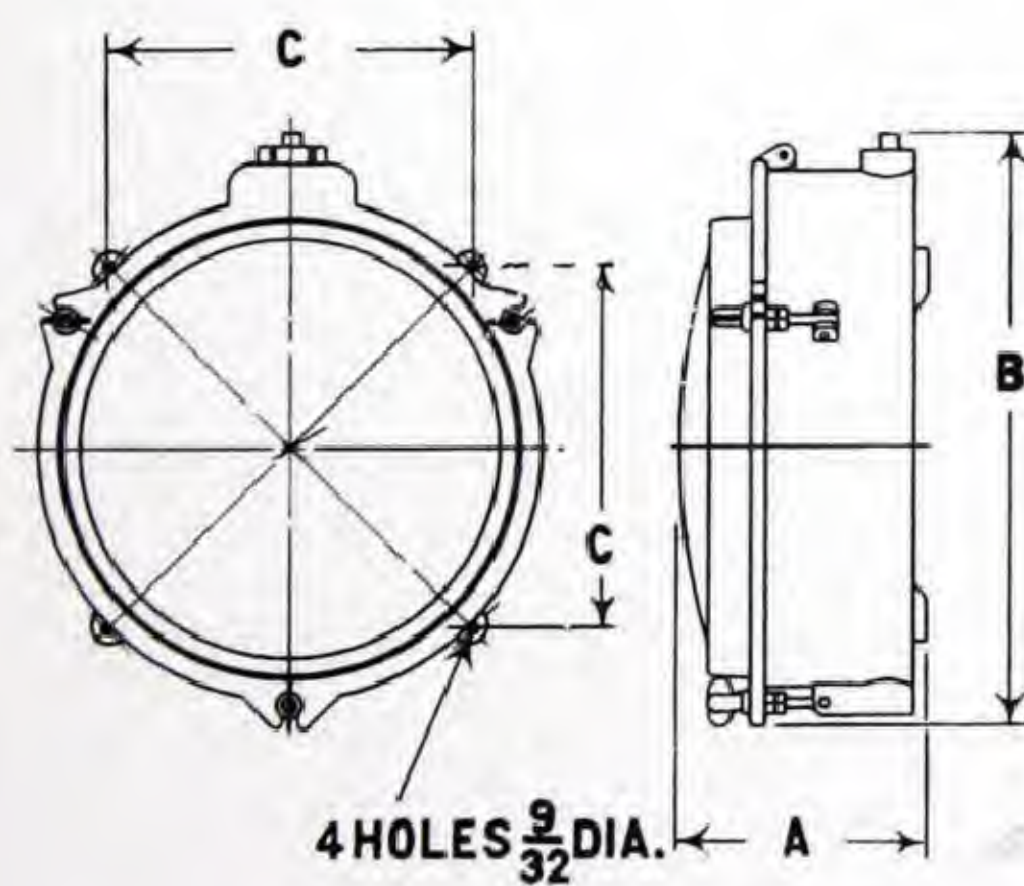
Dimensions in Inches

Type	A	B	D
RLU12	15 $\frac{3}{8}$	17 $\frac{5}{8}$	18 $\frac{3}{4}$
RLU16	19 $\frac{3}{8}$	19 $\frac{3}{8}$	23

FLOODLIGHTS

Dimensions

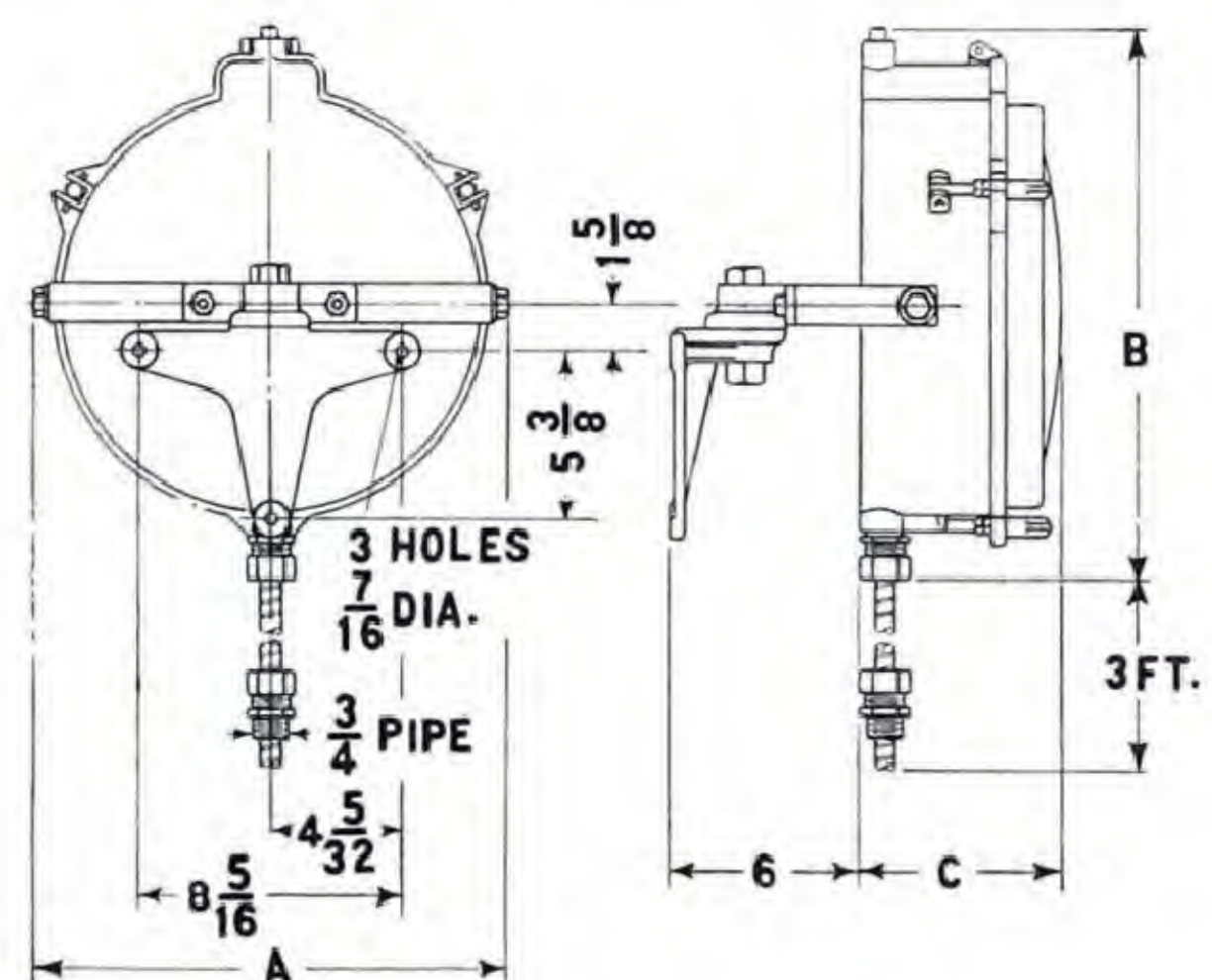
Type RM



Dimensions in Inches

Type	A	B	C
RM10	5 $\frac{7}{8}$	14	8 $\frac{3}{8}$
RM12	6 $\frac{11}{16}$	16 $\frac{5}{8}$	10 $\frac{1}{16}$

Type RMU



Dimensions in Inches

Type	A	B	C
RMU10	12 $\frac{5}{8}$	14 $\frac{13}{16}$	5 $\frac{3}{4}$
RMU12	15	17 $\frac{1}{4}$	6 $\frac{5}{16}$

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